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DEPARTMENT OF EDUCATION

CITY AND COUNTY
OF SAN FRANCISCO

SUPPLEMENT
TO THE COURSE OF STUDY

JULY 1904

AUGUST 1905

Adopted by the Board of Education
July 21, 1904

President, ALFRED RONCOVIERI
LAWRENCE F. WALSH
THOMAS F. BOYLE
CECIL W. MARK

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Superintendent of Schools
WILLIAM H. LANGDON

Deputy Superintendents
A. A. MACURDA
L. M. SHELLEY
T. L. HEATON
A. H. SUZZALLO

WITH THE COMPLIMENTS

— OF —

WM. H. LANGDON

SUPERINTENDENT OF SCHOOLS

SAN FRANCISCO

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OUTLINE IN ARITHMETIC.

A FIRST GRADE.

NUMBER WORK—CONCRETE AND ORAL.

All work in this grade is to be oral (not written) and objective or concrete (not abstract or formal).

All Arithmetic in this grade is to be subordinated to the more important needs of the language arts—oral language, reading, etc.

THE LANGUAGE OF NUMBER STORIES.

The number work of this grade is really language work where the teacher makes it her special business to teach children to comprehend the ordinary oral language used to describe any simple situation in life where the idea of number is involved.

The child should be taught (1) to *understand* the language which describes and (2) to *use* the language which describes a real situation where number is involved.

The number stories (problems or situations) to be taught are of three kinds: counting, adding, subtracting. These three ideas, in the order given, are to be identified by the children through many varying descriptions of the same, or similar, situations. In adding and subtracting, the highest number involved should not be larger than that the children can grasp with a single glance of the eye or can easily imagine; that is, not above 5.

As far as possible, make the exercise in number stories in a single class exercise deal with one set of topics, such as "a grocery store," "a bakery shop," etc. This will make the stories real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

FORMAL WORK INVOLVED.

Counting.—Teach the children to count orally to 30. Most of the work should be the counting of real things. No writing of numbers.

Addition.—In the addition stories the following combinations are to be used, being learned orally and incidentally, because the child can see, or imagine, the numbers involved:

2	1	3	2	2	2	1	4	1	1
+2	+3	+2	+1	+3	+1	+1	+1	+1	+4
4	4	5	3	5	3	2	5	2	5

There is no special order in which to use these combinations. No written work in addition combinations.

SUBTRACTION.—In the subtraction stories, use the same combinations as are given in addition. Use in a similar way.

B FIRST GRADE.

NUMBER WORK—FORMAL, WRITTEN AND APPLIED.

Written number work begins with this grade. Formal number work is now presented as such for the first time, the teacher having the child fix in the memory a certain number of fundamental combinations.

(1) All the combinations for this grade should be presented objectively to show that the result is really true. (2) Then the combination should be fixed in the memory so it will not be forgotten. (3) And finally, it should be applied in simple, oral problems so the combination can really be used for solving a real situation.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—The children can count orally to 30. Teach them to write to 30.

Count orally by 10's to 100. Use bundles of ten sticks, etc., to represent counting by 10's. Bind 10 bundles of ten to represent 100. Write by 10's to 100.

Show with written work that 10 follows 9; 20, 19; 30, 29; and use the written counting by 10's to advance the serial counting to 100. Much drill in oral and written counting to 99. Do not attempt to teach the place values of tens and units.

ADDITION.—Present objectively the following combinations, preferably in the order given:

2	2	3	2	4	3	2	5	3	4	3	5	4	4	5
+2	+3	+2	+4	+2	+3	+5	+2	+4	+3	+5	+3	+4	+5	+4
4	5	5	6	6	6	7	7	7	7	8	8	8	9	9

Use the oral language form "3 and 2 are 5," for $\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$

Then present the following, without objects in problem or story form, as the children will get them readily from the mere counting sequence:

$$\begin{array}{cccccccccccccccc} 1 & 1 & 2 & 1 & 3 & 1 & 4 & 1 & 5 & 1 & 6 & 1 & 7 & 1 & 8 \\ +1 & +2 & +1 & +3 & +1 & +4 & +1 & +5 & +1 & +6 & +1 & +7 & +1 & +8 & +1 \\ \hline 2 & 3 & 3 & 4 & 4 & 5 & 5 & 6 & 6 & 7 & 7 & 8 & 8 & 9 & 9 \end{array}$$

To save time, teach $\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$ from $\begin{array}{r} 2 \\ +3, \\ \hline 5 \end{array}$ $\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$ from $\begin{array}{r} 1 \\ +2, \\ \hline 3 \end{array}$ and so on.

When a combination is learned, apply it to a higher decade, as

$$\begin{array}{rrr} 2 & 2 & 2 \\ +3 & +13 & +23 \\ \hline 5, & 15, & 25, \end{array} \text{ etc.}$$

When all the above combinations are known, begin column addition, as:

$$\begin{array}{r} 3 \\ 2 \\ 4 \\ \hline 9 \end{array}$$

Be sure the combinations involved, $\begin{array}{r} 2 \\ +4 \\ \hline 6 \end{array}$ and $\begin{array}{r} 3 \\ +6 \\ \hline 9 \end{array}$ are known before going to the column.

Next, apply to higher decades, as $\begin{array}{rrr} 3 & 3 & 3 \\ 2 & 2 & 2 \\ 4 & 14 & 24 \\ \hline 9, & 19, & 29, \end{array}$ etc.

Give two-figure column addition, thus:

$$\begin{array}{r} 32 \\ 42 \\ 25 \\ \hline 99 \end{array}$$

Finally, introduce 1's into your column addition, and later 0's, teaching the children to ignore it.

SUBTRACTION.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations given under addition, but in the following form:

4	5	5	6	6	6	7	7	7	7	8	8	8	9	9
—2	—3	—2	—4	—2	—3	—5	—2	—4	—3	—5	—3	—4	—5	—4
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	2	3	2	4	3	2	5	3	4	3	5	4	4	5

2	3	3	4	4	5	5	6	6	7	7	8	8	9	9
—1	—2	—1	—3	—1	—4	—1	—5	—1	—6	—1	—7	—1	—8	—1
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	1	2	1	3	1	4	1	5	1	6	1	7	1	8

Use the oral language form "3 and 2 are 5" for $\begin{array}{r} 5 \\ -3 \\ \hline 2 \end{array}$

Apply combinations to higher decades as in $\begin{array}{rrr} 5 & 15 & 25 \\ -3 & -3 & -3 \\ \hline 2 & 12 & 22 \end{array}$,

but in *Oral Exercises Only.*

As fast as all the combinations of a single number are learned, use them in two-figure column subtraction, as $\begin{array}{r} 55 \\ -32 \\ \hline 23 \end{array}$. Be sure to have the child invariably attack the right hand column first.

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Length—12 inches=1 foot.
3 feet =1 yard.
Value— 5 cents = 1 nickel.
10 cents = 1 dime.
10 dimes=1 dollar.
(Teach use of c. and $.)
Liquid— 2 pints = 1 quart.
Weight— 1 pound.

Use measures in connection with real situations in order that the child may know for what kind of things the measures are used, particularly in buying. Wherever possible, use the measures

as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work in any form should be given in problem or story form as soon as it is mastered. As far as possible make the exercise in number stories in a single day's work deal with one set of topics, such as "a fruit store," "the school room." This will make the stories real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, once the reasoning with simple figures is mastered.

Teach the terms "add" and "subtract" for the two types of reasoning used in this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem or story, state what they are going to do—"add" or "subtract."

A SECOND GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—The ability to count to 100 has been developed. Teach the child to count by 100's to 1,000, using bundles of sticks if necessary. Teach the writing of the same. Show that 100 follows 99, and that after 199 comes 200, etc. Extend to 1,000. Thorough drill on reading and writing of numbers to 1,000.

GROUP COUNTING.—Use oral group counting as a method of addition. When all the combinations of 11 are learned:

Count by 2's 1-3-5, etc.
" " 5's 1-6-11, etc.
" " 10's 1-11-21, etc.

When all the combinations of 12 are learned—

Count by 2's 2-4-6, etc.
Count by 5's 2-7-12, etc.
Count by 10's 2-12-22, etc.

When all the combinations of 13 are learned—

Count by 3's 1-4-7, etc., 2-5-8, etc., 3-6-9, etc.
" " 4's 1-5-9, etc., 3-7-11, etc.
" " 5's 3-8-13, etc.
" " 10's 3-13-23, etc.

ADDITION.—Present the combinations as far as the sum of 13. Objective presentation will, ordinarily, be unnecessary. Simply give the combinations and have the children memorize them. The combinations are as follows:

1	9	2	8	3	7	4	4	5
+9	+1	+8	+2	+7	+3	+6	+3	+5
10	10	10	10	10	10	10	10	10

1	2	9	3	8	4	7	5	6
10	+9	+2	+8	+3	+7	+4	+6	+5
11	11	11	11	11	11	11	11	11

2	3	9	4	8	5	7	6
+10	+9	+3	+8	+4	+7	+5	+6
12	12	12	12	12	12	12	12

3	4	9	5	8	6	7	
+10	+9	+4	8	5	+7	+6	
13	13	13	13	13	13	13	

Use the oral language form "9 and 1 are 10," for

$$\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$$

To save time, from

$$\begin{array}{r} 1 \\ 9 \\ \hline 10 \end{array}$$

teach

$$\begin{array}{r} 9 \\ 1, \\ \hline 10 \end{array}$$

etc.

When a combination is learned apply it to a higher decade, as

$$\begin{array}{rrr} 2 & 2 & 2 \\ 8, & 18, & 28, \\ \hline 10 & 20 & 30 \end{array}$$

etc.

As fast as all the combinations of a number are learned, use them in column addition—

$$\begin{array}{r} 3 \\ 5 \\ 2 \\ \hline 10 \end{array}$$

Apply to higher decades, as

$$\begin{array}{rrr} 3 & 3 & 3 \\ 5 & 5 & 5 \\ 2, & 12, & 22, \\ \hline 10 & 20 & 30 \end{array}$$

etc.

Give two and three-figure column addition, thus

$$\begin{array}{rr} 53 & 532 \\ 34 & 342 \\ 22, & 225 \\ \hline 109 & 1099 \end{array}$$

Be sure to have the children attack the right hand column first, invariably

After the combinations of 12 are known, teach "carrying" in column addition, as is

$$\begin{array}{r} 25 \\ 12 \\ 43 \\ 32 \\ \hline 112 \end{array}$$

If an oral form is used, say, "Put down the 2 and add the 1." It is preferable not to use any visual aids from the beginning.

Subtraction.—Teach subtraction by the method of addition, as used by business men in making change. Use the combinations given under addition, but in the following visual form:

10	10	10	10	10	10	10	10	10	11	11	11	11	11	11	11	11	11
—9	—1	—8	—2	—7	—3	—6	—4	—5	—10	—9	—2	—8	—3	—7	—4	—6	—5
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1	9	2	8	3	7	4	6	5	1	2	9	3	8	4	7	5	6

12	12	12	12	12	12	12	12	13	13	13	13	13	13	13
—10	—9	—3	—8	—4	—7	—5	—6	—10	—9	—4	—8	—5	—7	—6
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2	3	9	4	8	5	7	6	3	4	9	5	8	6	7

Use the oral form, "9 and 1 are 10," for

$$\begin{array}{r} 10 \\ -9 \\ \hline 1 \end{array}$$

Apply combinations to higher decades, as in

$$\begin{array}{rrr} 10 & 20 & 30 \\ -8, & -8, & -8, \text{ etc.} \\ \hline 2 & 12 & 22 \end{array}$$

but in *Oral Exercises Only*.

As fast as all the combinations of a single number are learned use them in column subtraction where no "carrying" is involved, thus:

$$\begin{array}{rr} 989 & 108 \\ -453, & -94, \text{ etc.} \\ \hline 536 & 14 \end{array}$$

Teach the child to inspect the numbers before attempting to subtract, making sure that the number from which a number is to be subtracted is really larger, as in 389. The answer to 345

$$\begin{array}{r} -421 \\ \hline \end{array} \qquad \begin{array}{r} -345 \\ \hline \end{array}$$

should be recognized by inspection as zero.

Teach the handling of the zero in column substraction, as in

$$\begin{array}{lrlr} \text{(a)} & 867 & \text{(b)} & 867 \\ & -467 & & -400 \\ & \hline & & \hline \\ & 400 & & 467 \end{array}$$

MEASURES.—Teach the child to tell time. As preliminary to telling time, teach the Roman numerals to XII, and counting by 5's to 60. Teach children to say "5 minutes to 6," "5 minutes past 6," etc. Teach these measures:

Time— 60 minutes=1 hour.
24 hours = 1 day.
Count —12 things = 1 dozen.

Review measures of length (in., ft., yd.), value (ct., nickel, dime, dollar), liquid (pt., qt.).

Use measures in connection with real situations in order that children may know for what kind of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to children orally. Children will be given no problems in written (or printed) language form, though they may perform any necessary operations on blackboard or paper to assist them in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers, should follow after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and subtraction, teach the terms "add" and "subtract" as the names for

the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the child, after hearing the problem or story, state what he is going to do—"add" or "subtract."

B SECOND GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—Reading and writing of number through three figures has been learned. Teach thousands by the group method. First, teach pointing off the numbers. Then, read the number in the thousand group as though it stood alone, giving the name "thousand" to the comma, proceeding with the next group as though it stood alone.

GROUP COUNTING.—Use oral group counting as a method of addition. When the combinations through 14 are learned, count by

4's 2-6-10-etc. 5's 4-9-14-etc.
4's 4-8-12-etc. 10's 4-14-24-etc.

When the combinations through 15 are learned, count by

5's 5-10-15-etc. 6's 1-7-13-etc.
10's 5-15-25-etc. 6's 3-9-15-etc.
6's 5-11-17-etc.

When the combinations through 16 are learned, count by

6's 2-8-14-etc. 10's 6-16-26-etc.
6's 4-10-16-etc.
6's 6-12-18-etc.

When the combinations through 17 are learned, count by

7's All series. 8's 1-9-17-etc. 10's 7-17-27-etc.
8's 3-11-19-etc.
8's 5-13-21-etc.
8's 7-15-23-etc.

When the combinations through 18 are learned, count by

8's 2-10-18-etc. 10's 8-18-28-etc.
8's 4-12-20-etc.
8's 6-14-22-etc.
8's 8-16-24-etc.

When the combinations through 19 are learned, count by

9's All series. 10's 9-19-29-etc.

ADDITION.—Present the combinations as far as the sum of 19. Objective presentation will be unnecessary. Simply give the combinations and have the children memorize them. The written form is $\begin{array}{r} 4 \\ +10 \\ \hline 14 \end{array}$ and the oral form is "ten and four are fourteen."

The combinations are as follows:

4	5	9	6	8	7		5	6	9	7	8
+10	+9	+5	+8	+6	+7		+10	+9	+6	+8	+7
—	—	—	—	—	—		—	—	—	—	—
14	14	14	14	14	14		15	15	15	15	15

6	7	9	8		7	8	9		8	9	9
+10	+9	+7	+8		+10	+9	+8		+10	+9	+10
—	—	—	—		—	—	—		—	—	—
16	16	16	16		17	17	17		18	18	19

To save time, teach $\begin{array}{r} 9 \\ +5 \\ \hline 14 \end{array}$ from $\begin{array}{r} 5 \\ +9 \\ \hline 14 \end{array}$, etc.

When a combination is learned apply it to a higher decade, as

$$\begin{array}{r} 5 \\ +9, \\ \hline 14 \end{array} \quad \begin{array}{r} 5 \\ +19, \\ \hline 24 \end{array} \quad \begin{array}{r} 5 \\ +29, \\ \hline 34 \end{array} \text{ etc.}$$

As fast as all the combinations of a number are learned, use them in column addition— $\begin{array}{r} 3 \\ 2 \\ 5 \\ 4 \\ \hline 14 \end{array}$ Apply to higher decades, $\begin{array}{rr} 3 & 3 \\ 2 & 2 \\ 5 & 5 \\ 14, & 24, \text{ etc.} \\ \hline 24 & 34 \end{array}$

Give four, five and six-figure column addition, thus

$$\begin{array}{r} 2{,}245 \\ 3{,}233 \\ 1{,}722 \\ 4{,}234, \text{ etc.} \\ \hline 11{,}434 \end{array}$$

Subtraction.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations as given under addition, but in the following visual forms:

14	14	14	14	14	14		15	15	15	15	15
—10—	9—	5—	8—	6—	7		—10	—9	—6	—8	—7
—	—	—	—	—	—		—	—	—	—	—
4	5	9	6	8	7		5	6	9	7	8

16	16	16	16	17	17	17	18	18	19
−10	−9	−7	−8	−10	−9	−8	−10	−9	−10
6	7	9	8	7	8	9	8	9	9

14
In −9 use the oral form "9 and 5 are 14."
5

Apply combinations to higher decades, as in 14 24 34
but in *Oral Exercises Only*. −9, −9, −9, etc.
5 15 25

Extend column subtraction, with combinations below ten, to four, five and six places: 9786
−3652, etc.
6134

As fast as all the combinations of a single number are learned, use them in column subtraction of four, five and six figures, thus:

1498	14986	149869
−964	−9632	−94526
534	5354	55343

When the process of subtraction by addition is thoroughly mechanical with the children, teach "carrying" in subtraction.

The process of "carrying" should be taught as a purely mechanical process. First, teach the process where each possible
734 8431
step involves carrying, thus: −385, −5675, etc.
349 2756

Later alternate "carrying" and "not carrying," thus, 8485
−3946
4539

In 734 say "5 and 9 are 14" (putting down the 9), "9 and 4
−385 are 13" (putting down the 4), "4 and 3 are 7"
349 (putting down the 3).

You may call the attention of the child to the fact that whenever the upper number consists of two figures, the next lower number is raised one. The teacher might actually make the change in the visual form the first few times she teaches the oral form in connection with blackboard work. Experience makes it seem in-

advisable to allow the children to cross out their written work, as they do quicker and better work if they are taught to imagine the change from the start.

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Weight—16 ounces = 1 pound.
Liquid — 2 pints = 1 quart.
4 quarts = 1 gallon.
Square— 1 square inch.
1 square foot.
Time — 60 seconds=1 minute.
60 minutes=1 hour.
24 hours = 1 day.
7 days =1 week.

Review measures of length (inches, feet, yards), and value (cents, nickels, dimes, dollars).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and subtraction, teach the terms "add" and "subtract" as the names for the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add" or "subtract."

A THIRD GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS.—Frequent reviews of reading and writing of numbers of six figures in connection with the dictation of numbers for addition, subtraction, multiplication and division, and the reading of the answers of same.

ADDITION AND SUBTRACTION.—Give regular and frequent drills on accurate and rapid column addition and column subtraction.

MULTIPLICATION.—Present the multiplication combinations objectively, or by derivation from column addition, supplemented by objective work.

							2
						2	2
					2	2	2
				2	2	2	2
			2	2	2	2	2
		2	2	2	2	2	2
	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
4	6	8	10	12	14	16	18

When you teach $\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$, at once show that $\begin{array}{r} 3 \\ \times 2 \\ \hline 6 \end{array}$, and so with all the combinations having reverses.

Teach the following combinations in this grade; preferably in the order given:

2	2	3	2	4	2	5	2	6	2	7	2	8	2	9
×2	×3	×2	×4	×2	×5	×2	×6	×2	×7	×2	×8	×2	×9	×2
4	6	6	8	8	10	10	12	12	14	14	16	16	18	18

3	3	4	3	5	3	6	3	7	3	8	3	9
×3	×4	×3	×5	×3	×6	×3	×7	×3	×8	×3	×9	×3
9	12	12	15	15	18	18	21	21	24	24	27	27

4	4	5	4	6	4	7	4	8	4	9
×4	×5	×4	×6	×4	×7	×4	×8	×4	×9	×4
16	20	20	24	24	28	28	32	32	36	36

Use the oral form "3 2's are 6" for

$$\begin{array}{r} 2 \\ \times 3 \\ \hline 6 \end{array}$$

As soon as each table of combinations is learned drill in column multiplication up to four numbers in the multiplicand. Omit all zeros and, at first, all ones.

(a) No "carrying" in the multiplication:—

$$\begin{array}{r} 342 \\ \times 2 \\ \hline 684 \end{array}$$

(b) With "carrying":—

$$\begin{array}{r} 9578 \\ \times 2 \\ \hline 19156 \end{array}$$

(c) With two figures in the multiplier:—

$$\begin{array}{r} 232 \\ \times 32 \\ \hline 464 \\ 696 \\ \hline 7424 \end{array}$$

Call attention to the fact that the first number of a partial product *put down* is always put down *under* the figure used to multiply.

Teach the 1 combinations in column addition form. Precede it with an oral exercise where rhythym is used to fix the idea, saying: "One 1 is 1," "One 2 is 2," etc. Then apply in columns, thus:

$$\begin{array}{r} 2567 \\ \times 21 \\ \hline 2567 \\ 5134 \\ \hline 53907 \end{array}$$

Later, say, "2 ones are 2," "3 ones are 3," etc., and apply in columns, thus:

$$\begin{array}{r} 1214 \\ \times 43 \\ \hline 3642 \\ 4856 \\ \hline 52202 \end{array}$$

Division.—Present the following combinations given under multiplication, but in the following form:

2	3	2	4	2	5	2	6	2	7	2	8	2	9	2
2)4	2)6	3)6	2)8	4)8	2)10	5)10	2)12	6)12	2)14	7)14	2)16	8)16	2)18	9)18

3	4	3	5	3	6	3	7	3	8	3	9	3
3)9	3)12	4)12	3)15	5)15	3)18	6)18	3)21	7)21	3)24	8)24	3)27	9)27

4	5	4	6	4	7	4	8	4	9	4
4)16	4)20	5)20	4)24	6)24	4)28	7)28	4)32	8)32	4)36	9)36

3

Use the oral form "3 2's are 6" for 2)6

When a combination is mastered in the division form drill on it in the uneven division form:

2

2)5
4
1

3	3
3)10	3)11
9	9
1	2

4	4	4
4)17	4)18	4)19
16	16	16
1	2	3

Extend the dividend to four places:

(a)	(b)	(c)
48	155	1274
2)97	3)467	4)5099
8	3	4
17	16	10
16	15	8
1	17	29
	15	28
	2	19
		16
		3

Drill on the following types of zero difficulties to be certain the child can handle them:

(a)	(b)	(c)
235	247	515
3)706	3)741	3)1547
6	6	15
10	14	4
9	12	3
16	21	17
15	21	15
1		2

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Square—9 square feet=1 square yard.
Cubic— 1 cubic inch
1 cubic foot.
Value— A penny =1 cent
A quarter=25 cents
A half =50 cents
A dollar =100 cents

Teach children to count by 5's and 10's to 100 so as to add their money orally. Count the big coins first. Show that you add and subtract dollars and cents like other numbers, writing dollars under dollars and cents under cents, thus:

\$4.75	\$3.65
2.15,	1.20, etc.
\$6.90	\$2.45

Review measures of length (in., ft., yd.), liquid (pt., qt., gal.), weight (oz., lb.,), time (sec., min., hr., day, wk.) and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow after the reasoning with simple figures is mastered.

In addition to the terms "add" and "subtract" teach the terms "multiply," "divide" for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

B THIRD GRADE.

FORMAL WORK.

READING AND WRITING OF NUMBERS—Review reading and writing of numbers of six figures.

Teach the reading and writing of millions using the group method. First teach pointing off from right to left, thus: 275,432,678. Teach the reading of the figures within the group as though they stood alone; then give the name of the comma, then proceed to the next group until the whole number is called. Thus 275,432,678 would be read 275 million, 432 thousand, 678. Avoid the use of "and" in the reading of whole numbers.

ADDITION AND SUBTRACTION.—Give regular and frequent drills on accurate and rapid column addition and subtraction.

MULTIPLICATION.—Present the following combinations, preferably in the order given. No objective work will be necessary as the children have had such presentation in the A Third Grade.

5	5	6	5	7	5	8	5	9
×5	×6	×5	×7	×5	×8	×5	×9	×5
25	30	30	35	35	40	40	45	45

6	6	7	6	8	6	9
×6	×7	×6	×8	×6	×9	×6
36	42	42	48	48	54	54

7	7	8	7	9
×7	×8	×7	×9	×7
49	56	56	63	63

8	8	9
×8	×9	×8
64	72	72

9
×9
81

When $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$ is taught, teach $\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$, and so on with all combinations having reverses. Use the oral form "6 5's are 30" for $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$

As soon as each table of combinations is learned, apply in column multiplication as far as six figures in the multiplicand, omitting zeros at first.

$$\begin{array}{r} 135427 \\ \times 35 \\ \hline \end{array}$$

Before completing the work of the term extend to 8 places, merely to show the child he can do it.

Extend the multiplier to three places. Before leaving the work extend to five places, merely to show the child he can do it.

Teach the use of 0 in column multiplication, use preparatory rhythmic drill, saying "2 zeros are zero," 3 zeros are zero," etc., and apply in columns—

$$\begin{array}{r} 4030 \\ \times 23 \\ \hline 12090 \\ 8060 \\ \hline 92690 \end{array}$$

Later say "zero 2's are zero," "zero 3's are zero," etc., and apply in columns—

$$\begin{array}{r} 9678 \\ \times 50 \\ \hline 0000 \\ 48390 \\ \hline 483900 \end{array}$$

Immediately give short way of handling 0 in multiplier, calling attention to the fact that the first number of a partial product *put down* is always put down *under* the number used to multiply—

$$\begin{array}{r} 9678 \\ \times 50 \\ \hline 483900 \end{array}$$

Division.—Present the combinations given under multiplication, but in the following form:

$$\begin{array}{rrrrrrrrrr} 5 & 6 & 5 & 7 & 5 & 8 & 5 & 9 & 5 \\ \hline 5)25 & 5)30 & 6)30 & 5)35 & 7)35 & 5)40 & 8)40 & 5)45 & 9)45 \end{array}$$

6	7	6	8	6	9	6
6)36	6)42	7)42	6)48	8)48	6)54	9)54

7	8	7	9	7
7)49	7)56	8)56	7)63	9)63

8	9	8
8)64	8)72	9)72

9
9)81

6

Use the oral form "six 5's are 30" for 5)30.

When a combination is mastered in its even division form, apply and drill it in its uneven division forms—

5^1	5^2	5^3	2^4
5)26	5)27	5)28	5)29
25	25	25	25
1	2	3	4

6^1	6^2	6^3	6^4	6^5
6)37	6)38	6)39	6)40	6)41
36	36	36	36	36
1	2	3	4	5

7^1	7^2	7^3	7^4	7^5	7^6
7)50	7)51	7)52	7)53	7)54	7)55
49	49	49	49	49	49
1	2	3	4	5	6, etc.

Extend the dividend to five and six places. Before completing the work of the term, extend to eight places, merely to show the child he can handle a large number.

DIVISION.—Drill on the following types of zero difficulties to be certain the child can handle them:

(a)	508⅔	(b)	502⅓	(c)	500⅓
	3)1526		3)1507		3)1501
	15		15		15
	26		7		1
	24		6		
	2		1		

FRACTIONS.—All work with reading, writing and changing of fractions in this grade is to be given objectively. The denominators of fractions used are not to exceed one figure. Teach objectively the halves, thirds, fourths, fifths and sixths, so as to make them meaningful.

Teach children to understand mixed numbers, using as a whole number a single figure with the fractions suggested above, as 1½, 2⅔, etc.

Teach children to understand improper fractions with the denominators above mentioned, 3/2, 5/3, etc.

Show that 2/2 is equal to 1 whole, 3/3, 4/4, etc.

Show that 6/8 is equal to ¾. Reduce simple fractions to lowest terms.

Then with these same, simple fractions, show through objective work how to change an improper fraction to a mixed number, a mixed number to an improper fraction, etc.

MEASURES.—Present the following measures, where possible, through objective work, showing equality where a table or part of a table is given:

Square—144 square inches=1 square foot.
(9 square feet=1 square yard).
Weight—(16 ounces—1 pound).
2000 pounds=1 ton.
Time—365 days=1 year, except leap year.
30 or 31 days=1 month, except February.
12 months=1 year.
"Thirty days hath September,
April, June and November."

Review measures of length (inches, feet, yards), weight (ounces, pounds), liquids (pints, quarts, gallons), time and value.

Use measures in connection with real situations in order that the child may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of demoninate numbers as a concrete application of formal multiplication and division, wherever the numbers are simple enough to fall within the formal work covered. Thus:—"How many pints in 3 quarts?" "How many quarts in 8 pints?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lession.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers, should follow, where the reasoning with simple figures is mastered.

In addition to the terms "add," and "subtract," teach the terms "multiply," "divide" for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

A FOURTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION and MULTIPLICATION.

DIVISION.—Review carefully long division by one number as long division by two numbers is to be nothing more nor less than an outgrowth of the division work of the previous grade.

Teach long division by two figures, using through the entire grade such divisors as 91, 83, 72, etc., where the second figure is much smaller than the first.

Present long division in the following steps:—

(1) (a) *Object*—To teach use of trial divisor.

(b) *Material*—Use dividend that will give one figure in quotient and make first trial divisor the final

$$\begin{array}{r} 9\frac{15}{91} \\ \hline \text{quotient, as in } 91)834 \\ 819 \\ \hline 15 \end{array}$$

(c) *Process*—"How many 9's in 83?"
"9 9's in 83."
Multiply 91 by 9.
Subtract.
Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

(2) (a) *Object*—To teach method of testing.

(b) *Material*—Use dividend that will give one figure in quotient, but where first trial divisor is not the final quotient (where the final trial divisor is one less than the first

$$\begin{array}{r} 8\frac{83}{98} \\ \hline \text{trial divisor) as in } 93)827 \\ 744 \\ \hline 83 \end{array}$$

(c) *Process*—"How many 9's in 81?
"9 9's in 81. Next number—17."
"9 3's are 27. 27 is larger than 17, therefore the trial divisor is 8" (one less than 9).
Multiply 93 by 8.
Subtract.
Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

(3) Extend the dividend so as to get two figures in the quotient. Later three figures in the quotient.

Give much drill to make the work thoroughly mechanical.

FRACTIONS.—READING AND WRITING OF FRACTIONS.—The child can read, write and change fractions with one figure in the denominator. Extend the work to denominators of two figures as far as 81, using only the numbers learned as products in the multiplication combinations. Make certain that the child can perform with certainty the following changes:—

(a) From mixed number (or whole number) to improper fraction.

(b) From improper fraction to mixed number (or whole number.)

ADDITION OF FRACTIONS.—Present addition of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)	(d)
$\frac{1}{4}$	$1\frac{1}{4}$	$\frac{2}{3}$	$1\frac{2}{3}$
$\frac{2}{4}$	$3\frac{2}{4}$	$\frac{2}{3}$	$3\frac{2}{3}$
$\frac{3}{4}$	$4\frac{3}{4}$	$\frac{4}{3}$	$\frac{5}{3}$
		$1\frac{1}{3}$	$1\frac{1}{3}$
			$5\frac{1}{3}$

(2) With different denominators, one being a common denominator:

(a)	(b)	(c)	(d)
$\frac{1}{2}$ $\frac{2}{4}$			
$\frac{1}{4}$			
$\frac{3}{4}$	(Carry through steps b, c and d.)		

(3) With different denominators, none being a common denominator:

(a)	(b)	(c)	(d)
$\frac{1}{2}$ $\frac{3}{6}$			
$\frac{1}{6}$ $\frac{2}{6}$			
$\frac{5}{6}$	(Carry through steps b, c and d.)		

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

After the addition of two fractions (or mixed numbers) is well mastered give three or four to show that the same principle applies, but keep the examples simple.

Drill on reduction to lowest terms whenever the opportunity occurs.

DECIMALS.—READING AND WRITING OF DECIMALS.—Teach reading and writing of decimals through three places.

Show that decimals is only a form of common fractions by objective work, or derive the relationship from U. S. Money. The child already knows a "quarter" is $.25, a "half," $.50, etc.

With very simple numbers show how to make the following changes:—

(1) Change a decimal to a fraction.
(2) Change a fraction to a decimal.

MEASURE.—Present the following measures through objective work, showing equality where a table or part of a table is given:—

Length—12 inches=1 foot.
3 feet=1 yard.
16½ feet: 5½ yards=1 rod.
Cubic—1728 cu. in.=1 cu. ft.
27 cu. ft.=1 cu. yd.

Review measures of area (sq. in., sq. ft., sq. yd.), weight (ounces, pounds, tons), liquids (pts., qts., gals.), time and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus, "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one step reasoning, as they form the basis for solving problems with two step reasoning which are presented for the first time in this grade. Present two-step reasoning problems such as the following: "If three pencils

cost fifteen cents, what will two cost?" Show that this problem merely contains two, simple, one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problems, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FOURTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION and MULTIPLICATION.

DIVISION.—Review long division by two numbers with easy divisors, such as 91, 82, etc. Gradually give more difficult divisors, such as 27, 38, 49, etc. The teacher may show the children on the blackboard how to perform long division with such divisors by "testing" which is a slow method, then presenting the method of having the children call such divisors as 27, 28, 29 "thirty" for purposes of getting the partial quotient. Extend the divisor to three or four places in a few lessons just to show that the principles of long division already mastered apply.

At the beginning of this term teach short division as a short way of doing division by one figure, as in

$$\begin{array}{r} 9535\frac{5}{8} \\ \hline 8)76285 \end{array}$$

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from mixed number to improper fraction, and vice versa. Review ADDITION OF FRACTIONS and mixed numbers, where the denominator is not above 81.

SUBTRACTION OF FRACTIONS.—Present subtraction of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

(a)	(b)	(c)
		$5\frac{7}{5}$
$\frac{4}{5}$	$6\frac{4}{5}$	$6\frac{4}{5}$
$\frac{2}{5}$	$3\frac{2}{5}$	$3\frac{2}{5}$
$\frac{2}{3}$	$3\frac{2}{5}$	$2\frac{3}{5}$

(2) With different denominators, one being a common denominator:

(a) (b) (c)

$\frac{\frac{3}{4}}{\frac{1}{2}}$ $\frac{2}{4}$ (Carry through steps b and c)

$\frac{}{\frac{1}{4}}$

(3) With different denominators, none being a common denominator:

(a) (b) (c)

$\frac{\frac{3}{8}}{\frac{1}{2}}$ $\frac{4}{6}$ $\frac{3}{6}$ (Carry through steps b and c)

$\frac{}{\frac{}{\frac{1}{6}}}$

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

Drill on reduction to lowest terms whenever the opportunity occurs.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF DECIMALS.—Teach addition and subtraction of decimals of three places in this grade. Give a preliminary drill in arrangement of decimals according to the decimal point. When the children can arrange the numbers, teach bringing down the decimal point. Then add or subtract as with whole numbers, thus:

(a)		(b)	
	81.05		974.02
	9.156		6.045
	70.84		
	161.046		967.975

Later, extend the decimal places in a few exercises to show that the same principle applies.

MEASURES.—Add to the measures already learned, the following:—

Length—5280 feet=320 rods=1 mile.
Square—30¼ sq. yards=1 square rod.
160 square rods=1 acre.
640 acres=1 square mile.
Cubic—1728 cu. inches=1 cu. foot.
27 cu. feet=1 cubic yard.
128 cubic feet=1 cord.

Review measures of liquid (pt., qt., gal.), weight (oz., lb., ton), U. S. money and time, and also previously learned parts of linear (in., ft., yd.), and square measure (sq. in., sq. ft., sq. yd.).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus, "How many months in 23 years?" "How many years in 36 months?"

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

All problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which constitute the special work of this year. Give two-step reasoning problems, such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two, simple, one-step problems, such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

A FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF FRACTIONS.—Review addition and subtraction of fractions with common denominators of two figures, up to 81.

Add and subtract fractions involving common denominators larger than 81. Proceed by the following steps:

(1) (a) Object—To find common denominator for several fractions.

(b) Material—Fractions, with denominators of two figures, not above 81. $\frac{5}{12}$, $\frac{7}{18}$.

(c) Process—

$$\begin{array}{r|cc} 3 & 12 & 18 \\ \hline 2 & 4 & 6 \\ \hline & 2 & 3 \end{array}$$

or

$$\begin{array}{r|cc} 6 & 12 & 18 \\ \hline & 2 & 3 \end{array}$$

Common denominator is the product of $3\times2\times2\times3$ (or $6\times2\times3$) or 36.

(2) Proceed to change fractions from one denominator to common denominator as with simpler figures, and add or subtract as before.

Merely give enough work in finding common denominator to fix the method. Give no more work with common denominators above 81 than is necessary to apply the factoring process.

MULTIPLICATION OF FRACTIONS.—Present multiplication of fractions by the method of "cancellation," thus: $\frac{2}{3}\times\frac{3}{4}=\frac{1}{2}$. Drill specially on cancellation. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process to reality. Give no other explanation. Drill the children until they are able to multiply the following with habitual and mechanical ease:—

(1) (a) Fraction by integer.
(b) Integer by fraction.
(c) Fraction by fraction.

(2) (a) Mixed number by integer.
(b) Integer by mixed number.
(c) Mixed number by mixed number.

Later, use fractions with denominators of two figures up to 81. When the preceding work has been thoroughly mastered, a few exercises with larger denominators might be given, merely to show the children that the same method of operation applies.

DECIMALS.—Review READING AND WRITING OF DECIMALS. with changes from decimal to fraction and vice versa. Also review ADDITION AND SUBTRACTION OF DECIMALS.

MULTIPLICATION OF DECIMALS.—Teach multiplication of decimals (of three places) in this grade. First, multiply as though both multiplier and multiplicand were whole numbers. Then count up the total number of figures in decimal places in both

multiplier and multiplicand. Finally, point off, from the right, the same number of figures in the product and place the decimal point. Thus:

$$\begin{array}{r} 42.56 \\ 7.5 \\ \hline 21280 \\ 29792 \\ \hline 319.200 \end{array}$$

Teach the process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt. qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two step reduction, up and down, showing that two step reduction is nothing but one step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Hitherto, all problems have been presented to the child orally. With this grade they may be presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse and puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

B FIFTH GRADE.

FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING of Fractions, ADDITION, SUBTRACTION AND MULTIPLICATION of Fractions.

DIVISION OF FRACTIONS.—Present division of fractions by the method of "inversion and cancellation," thus,

$$\frac{3}{4} \div \frac{1}{8} = ? \qquad \frac{3}{4} \times \frac{8}{1} = 6$$

Drill specially on inversion. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process with reality. Give no other explanation. Drill the children until they are able to divide the following with habitual and mechanical ease:

(1) (a) Fraction by integer.
(b) Integer by fraction.
(c) Fraction by fraction.

(2) (a) Mixed number by integer.
(b) Integer by mixed number.
(c) Mixed number by mixed number.

Later, use fractions with denominators of two figures, up to 81. When the preceding work has been mastered, a few exercises with larger denominators might be given merely to show the children that the same method of operation applies.

DECIMALS.—Review READING AND WRITING OF DECIMALS, ADDITION, SUBTRACTION AND MULTIPLICATION of Decimals.

DIVISION OF DECIMALS.—Teach division of decimals (of three places) in this grade. First, give a preliminary drill in placing the decimal point in the quotient space. Thus:

$$8.3 \overline{)\,9175.64} \quad \text{or} \quad 8.3 \overline{)\,750.}$$

STEPS:

(2) Count the same number of places to the right of the decimal point in the dividend, and place a decimal point in the corresponding place in the quotient space.

(3) Divide as for whole numbers.

Teach this process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yds., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pts., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two step reduction, up and down, showing that two step reduction is nothing but one step reduction repeated. Do not continue the work after the principle is mastered.

PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse, or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures necessitating written work may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do in terms of "add," subtract," "multiply" and "divide."

A SIXTH GRADE.

Review of Formal Work.—There should be frequent and regular drill on the four fundamental operations as applied to integers, common fractions, and decimals. Review commonly used tables of measure.

Percentage.—The arithmetic work of the sixth year is given over to the treatment of percentage. In this grade the emphasis is on formal work in percentage, though the principles of percentage should receive constant application at every point. Special drill should be given on the following formal processes:

(1) To find any per cent of a number.
(2) To find what per cent one number is of another.
(3) To find a number when a certain per cent of it is given.

Present percentage in its relation to decimals and common fractions showing how to change from one to the other readily. The percentage equivalents of the most common fractions should be learned and used as the basis of much "mental" work. (*State Arith.*, p. 216.)

Apply percentage to simple, real situations, that the child is likely to need to understand in terms of per cent. Use simple interest, in years and half years only, as one easy application.

Use *Grammar School Arithmetic* (Cal. State Series), as a text, selecting necessary material from pp. 216-228. Teachers may use Smith's *Grammar School Arithmetic* (Ginn) as a desk book from which to gather further material. (See pp. 181-184.)

Business Life.—Discuss the topic of "Going into Business." (See *Smith*, pp. 306, 307), showing that every person whether he conducts a business, works on a wage, or draws an income, needs to be "businesslike." Discuss the following sub-topics: Simple Accounts (*Smith*, p. 338), Bank Accounts, Savings Banks, Banks of Deposit (*Smith*, pp. 326-329). Show how to make out the following business forms: Simple Accounts, Deposit Slip, Check (*Smith*, pp. 328, 329, 204), Receipted Bill and Receipt (*Smith*, pp. 125, 136, 205).

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B SIXTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

PERCENTAGE.—Review formal percentage, particularly the following processes:

(1) To find any per cent of a number.
(2) To find what per cent one number is of another.
(3) To find a number when a certain per cent of it is given.
(4) To change any per cent to decimal and common fractions, or the reverse.

BUSINESS APPLICATIONS.

As the work of the previous grade emphasized the formal work of percentage, the work of this grade emphasizes its application to business life. The special topic for this grade is "The Buying and Selling of Goods," and covers the sub-topics: *"Merchandising," "Commission"* and *"Trade Discount."* The teacher should discuss the nature and function of these various business relations before giving the technical and mathematical methods of computation used in the same. This information is just as valuable as the mere arithmetic and serves to make the latter seem more real and useful to the child.

MERCHANDISE.—Teach profit and loss in buying and selling of goods. Give simple problems that business men must solve every day. Avoid complicated problems with three and four steps in reasoning. Use *Grammar School Arithmetic* (State Series) as a text, selecting necessary material from pp. 228-230. Teacher may find additional material in Smith's *Grammar School Arithmetic,* pp. 194-197, which may be used as a desk book.

COMMISSION.—Teach the method of computing commissions for buying and selling goods. Stick to actual commission problems, avoiding complicated problems that are puzzling and unreal. Avoid problems, part of the data of which is in previous examples. Use *State Arithmetic,* selecting necessary material from pp. 230-233. Additional material may be found in *Smith's Arithmetic,* pp. 199-201.

TRADE DISCOUNT.—Teach the process of computing trade discount. At first, avoid all examples mixing discount with profit and loss, etc. Two-step reasoning should be the limit in any problem, unless the principles involved are exceedingly simple. Use *State Arithmetic,* selecting necessary material from pp. 233-236. Additional material may be found in *Smith's Arithmetic,*

335-337. Have the children write orders and bills as suggested in *Smith,* p. 337.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A SEVENTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is *"The Borrowing and Loaning of Money,"* and covers the special topic of "Interest," with some incidental treatment of *"Promissory Notes," "Partial Payments"* and *"Compound Interest."* Our whole system of loaning and borrowing money, with the function of banks, should be explained to the class before computing interest or writing notes.

INTEREST.—Simple interest for years and half years has been taken up as an application of percentage in the A Sixth Grade. In this grade study interest for years, months and days calculated by the 6 per cent method. Omit other methods. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 236-243. Further material may be found in Smith's *Grammar School Arithmetic* (Ginn), pp. 299-305, which may be used as a teacher's desk book.

Have the class write promissory notes, explaining their use and meaning. (See *State Arithmetic,* pp. 244, 245.) Treat partial payments and compound interest briefly, merely showing that they are both applications of simple interest, one being a decrease of the principal and the other an increase. Tell where and how they are used. No long and involved problems.

Omit Bank Discount.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B SEVENTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

BUSINESS APPLICATIONS.

The study of arithmetic as applied to business is continued in this grade. The special topic for the term is *"The Protecting of Our Business Interests,"* and includes the sub-topics of *"Insurance"* and *"Taxes."* Before treating the processes the class should discuss the institutions of Insurance and Taxation. The first is our way of paying a company for protection against accident, fire, water, etc. The second is our way of paying the government for protecting us against disorder, violence and lawlessness.

INSURANCE.—Discuss both Property and Personal Insurance, but teach the class to work examples only in Property (or Fire) Insurance, omitting all examples in Personal (or Life) Insurance. Use *Grammar School Arithmetic* (California State Series) as a text, selecting necessary material from pp. 254, 255. Further material may be found in Smith's *Grammar School Arithmetic* (Ginn), pp. 359, 360, which may be used as a teacher's desk book.

TAXES.—Discuss the various forms of taxation. Compute only Property Tax. Omit all examples in indirect taxation, such as Duties and Customs, Internal Revenue, etc. Select necessary material from *State Arithmetic*, pp. 259-261. For additional material, see *Smith's Arithmetic*, pp. 357, 358.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

A EIGHTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

Give short reviews in the formal methods of applying percentage as used in Merchandising, Commission, Trade Discount and Interest. Select necessary material from the text, *Grammar School Arithmetic* (California State Series) and Smith's *Grammar School Arithmetic* (Ginn) which may be used as a teacher's desk book. Page references are as follows: Merchandising (*State,* 228-230) (*Smith,* 194-197); Commission (*State,* 230-233) (*Smith,* 199-201); Trade Discount (*State,* 233-236) (*Smith,* 335-337); Interest (*State,* 236-243) (*Smith,* 299-305).

RATIO AND PROPORTION.—Present the idea of ratio with much concrete work. Much drill in its application as it forms a basis for work in proportion. Take only problems with the simple relation of two parts, omitting all complicated applications. Use *State Arithmetic* as a text, selecting necessary material from pp. 199-209. For further material see *Smith,* pp. 217-222.

Present the idea of proportion with much concrete work. Use the so-called "cause and effect" method of explaining proportion. Thus: $2:3 :: 10:15$ or $\frac{2}{3} = \frac{10}{15}$, may be expressed concretely by saying, "If 2 pencils cost 10 cents, then three pencils must cost 15 cents." Use only such problems as express the simple proportion relation clearly. Select necessary material from *State Arithmetic,* pp. 340-348. Further material may be found in *Smith,* pp. 223-233.

BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is *"Business Co-operation,"* which includes the sub-topics of *"Partnership"* and *"Corporations."* Discuss the place of each in our business life. Have the children work out simple partnership examples as an application of ratio and proportion. Omit all computations relating to Corporations, such as Stocks and Bonds.

For problems in partnership select necessary material from *State Arithmetic,* "Proportional Parts," pp. 348-351. Further material may be found in *Smith,* pp. 339, 340. Select no problems where more than one simple proportion is involved.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

B EIGHTH GRADE.

REVIEW OF FORMAL WORK.

There should be frequent and regular drills in the four fundamental operations as applied to integers, common fractions and decimals.

Review the commonly used measures, such as Linear (in., ft., yd., rd., mi.); Square (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi., township), and Cubic Measure (cu. in., cu. ft., cu. yd.), and Measures of Weight (oz., lb., ton); Liquid (pt., qt., gal.); Time and U. S. Money.

Give short reviews in the formal methods of computing Property (or Fire) Insurance, Property Taxes (State and Local), and Partnership. Select necessary material from the text, *Grammar School Arithmetic* (California State Series) and Smith's *Grammar School Arithmetic* (Ginn), which may be used as a teacher's desk book. Page references are as follows: Insurance (*State,* 254, 255) (*Smith,* 359, 360); Taxes (*State,* 259-261) (*Smith,* 357, 358); Partnership (*State,* 348-351) (*Smith,* 339, 340).

APPLIED MEASUREMENTS.

Present such applications of measurements as are commonly used with reference to Lines, Angles, Surfaces and Solids. Give only the simplest problems of each type.

Lines.—Have the class understand what is meant by vertical, horizontal, oblique and parallel lines, using concrete work.

Angles.—Give concrete work, illustrating right, acute and obtuse angles. (*State Arith.,* p. 367.)

Apply angular or circular measure, using degrees only, to various angles, giving some idea as to what is meant by angles of 90°, 45°, etc. Select simple material from *State Arith.,* pp. 400, 401.

Surfaces.—Give concrete work, illustrating the various quadrilaterals and triangles, and the circle. Teach finding the surfaces of the same, omitting trapezium, polygons and other difficult applications of measure. Later, when the children can recognize the solids, teach finding the surface of a rectangular

prism. Carefully select simple material from *State Arith.,* pp. 365-383, and also see *Smith,* pp. 308-310, 319.

In connection with finding the surface of a square, treat the finding of the side of a square. Teach the formal process of SQUARE ROOT in this connection. Limited application to right-angled triangles. Select simple material from *State Arith.,* pp. 322-332, and see *Smith,* pp. 311-317.

SOLIDS.—Give concrete work, illustrating prisms, cylinder, pyramid, cone and sphere. Teach finding cubic contents of rectangular prism and cylinder only. Carefully select simple material from *State Arith.,* pp. 383-397, and also see *Smith,* p. 320.

MENTAL ARITHMETIC.

No special place is made for "mental arithmetic." All arithmetic is mental. When numbers are small, work the examples without pencil or crayon. Use pencil or crayon for large numbers. The beginning of every step should be made with small numbers, and here a large amount of work without pencil or crayon may be done.

LANGUAGE WORK.

A FIFTH GRADE.

Through the A Fifth the work will be taken from the Lessons in Language as outlined in the old Course of Study.

B FIFTH GRADE.

Review such work in Part I of Lessons in Language as seems necessary. Continue composition.

Give special attention to paragraph writing from topic sentences, pictures, stories, etc., to outlining of paragraph topics, from reading or oral composition, and to "Composite Composition"—(1) teacher and class talk over subject (oral composition); (2) Select paragraph topics from previous discussion; (3) Arrange topics for a letter; (4) Children suggest sentences on first topic, teacher writes in corrected form on blackboard; (5) Children read paragraph aloud to test correctness, smoothness, arrangement of sentences; (6) Rewrite paragraph as corrected; (7) Children copy corrected paragraph; (8) Treat other paragraphs in similar manner. Lead children to more and more independent work in writing of paragraphs and outlining.

GRAMMAR.

Grammar treats of the thought relations of the sentence. Teach these relations, not technical terms only.

Do not teach the book merely, but use it as an aid in teaching the subject. The book does not grade difficulties. This must be done by selecting easy material for the gradual development of the subject. Begin each new subject with sentences in which the grammatical relation is most obvious. With each review, add sentences in which the difficulty is greater or the grammatical relation less obvious. Thus, the verb relation is most readily seen

in verbs of one word expressing action, least obvious in the forms of the verb "be"; the noun relation is most clearly seen in names of children and objects in the room, least obvious in the names of qualities and abstractions. Do not present many difficulties in one lesson. The Grammar generally quotes sentences from good literature too difficult in thought and wording; these, however, may be used for final drill, the thought relation having been developed from simple sentences such as children read and speak.

Use "modify" only, not "qualify" and "limit." Omit kinds of nouns except common, proper, and collective; kinds of adjectives except proper; all kinds of adverbs.

Give much attention to the larger thought relations of the sentence. As soon as studied, apply the thought relations to the better interpretation of language in all other subjects.

Most of the composition indicated in the text-book should be omitted, as better material for composition will be found in connection with Geography, Literature, and History.

Not more than three lessons per week should be given to technical Grammar, the remainder to oral and written composition.

A SIXTH GRADE.

Lessons from State Grammar—1, 2, 4, 6, 7, 9, 11, 12, 13, 14, 15, 18, 19, 20, 21, 22, 24, 27.

Distinguish sentence from mere group of words; thus, The boys play ball, Playing ball in the park, The girls went to school, The girls while going to school, When we went home, When we went home it was dark. Continue such drill till children *feel* completeness of statement, and complete sentences flow from tongue or pen. Repeat such drill whenever composition work shows need of it.

Teach subject and predicate in simple sentence, subject and predicate being in *usual* order, as: Birds fly, boys play ball. Develop the idea of modifiers by expanding simple sentences, thus: The boys play ball, The large boys play football, The large boys of our school play football in the park, The large boys who attend our school play football in the park in pleasant weather. The large boys attending our school play football in the park when the weather is pleasant. When the weather is pleasant the large boys of our school play football in the park, etc. Tell whether each new modifier adds to the subject or to the predicate. Teach bare subject, bare predicate, entire subject, entire predicate in sentences like above.

Teach nouns, personal pronouns, verbs in most easily recognized forms. *Much drill.*

B SIXTH GRADE.

Lessons from State Grammar—24, 38, 41, 42, 29, 50, 51, 54 (57 and 63 omitted but method applied to study of Horatius), 61, 64, 65, 67, 71.

Review subject and predicate. Teach subject and predicate in inverted sentences, as: The house stood under the trees, Under the tall tree by the river stood the house of the farmer. "Did what?" "Stood," "What stood?" "House." Add modifiers to subject and predicate making the sentences longer. Find modifiers of subject and predicate, but do not classify either as parts of speech or as phrases and clauses.

Review nouns, pronouns and verbs, adding more difficult forms. Teach verb phrases. Teach complements.

Teach to recognize adjective, adverb, preposition, co-ordinate conjunctions (and, or, but), interjections in simplest forms and uses.

Teach the helpers used with the three forms of the verb (present, past, past participle), and apply to the following verbs: Sit, set, lay, lie, see, go, come, write, break.

A SEVENTH GRADE.

Lessons from State Grammar—2, 58, 85, 156, 21, 127, 128, 129, 83, 84, 100.

Review subject and predicate, adding more difficult sentences. *Much drill,* dwelling on the larger thought relations of the sentence. Select sentences from Reading, Geography, History. Review helpers used with the three forms of the verb, applying to such verbs as do, drive, drink, eat, bite, give, know, ring, sing, rise, run, strike, take, blow, throw.

Teach phrases and clauses.

Teach subordinate conjunctions (conjunctive adverbs); relative, demonstrative, indefinite and interrogative pronouns.

Teach simple, complex, and compound sentences. *Much* phrase and clause analysis, selecting sentences from Reading, Geography and History. Show how different arrangements of phrases and clauses affect the meaning or emphasis of the sentence.

B SEVENTH GRADE.

Lessons from State Grammar—72 (omit 73 and 76), note to 76, 109, 102, 103, 104, 105, 106, 107, 108, 110, 111, 112, 113, 114, 115, 120, 121, 125, 126, 131, 132, 133, 185 to 188 (apply to study of literature.)

Review verbs, adding more difficult ones. Teach verbals in contrast to verbs:—Boys play ball, The boys playing ball, We went to town, Having gone to town. "Play" and "went"—say it (or assert); "Playing," "having gone," mean it (or imply).

Divide verbals into participles and infinitives *according to form* (infinitive, to see, to have seen) (participle, seeing, seen).

Teach use of participles and infinitives as subject of sentence, complement, object of verb or preposition, etc.

Nouns; collective nouns and their use, gender, number, and case.

Pronouns; gender, number, case, declensions.

Principal parts of twenty-five more verbs during term.

A EIGHTH GRADE.

Lessons from State Grammar—142, 155, 148 (omitting definitions), 158, 159, 173, 176, 177, 178, 179.

Review nouns and pronouns, principal parts of verbs and use list of irregular verbs in back of grammar.

Adjectives; comparison, omit kinds (except proper).

Adverbs; comparison, formed from adjectives by adding "ly," omit kinds.

Prepositions; compound, phrases as prepositions.

Conjunctions; co-ordinate, subordinate, correlative.

Much phrase and clause analysis with special attention to connectives. Select sentences from Reading, Geography, History. Note the effect of different arrangements on the meaning of the sentence; of different arrangements of phrases and clauses to give ready transition from thought to thought in the paragraph.

B EIGHTH GRADE.

Lessons from State Grammar—216 (teach this before Transitive and Intransitive Verbs), 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 203, 204, 205, 206, 207, 209, 210, 211, 212, 213, 221, 225, page 279.

Review participles and infinitives, verbal nouns, and adjectives. Principal parts of verbs, further use of list of irregular verbs, and use of dictionary for irregular verbs.

Verbs; voice, transitive (one which in active voice takes an object to complete its meaning) and intransitive, regular and irregular, mode, tense, full conjugation of verb and verb phrase.

Much word phrase and clause analysis, selecting sentences from other studies. Continue study of sentence and paragraph arrangement.

READING.

Reading should be both oral and silent. Silent reading is grasping the thought and feeling the emotion of the author. Oral reading is expressing the thought and emotion of the author to others. School reading should be interpretive, not imitative. The teacher's voice should be the child's model for good expression in reading.

The greater part of reading should be oral. Occasionally test the power of silent reading. Have children read paragraph, close books, tell what was read. Reread to see how much more can be grasped. The preparation of history and geography lessons, under the direction of the teacher, will give good training in silent reading.

Examples in arithmetic, sentences in grammar should be as well read as any selection in literature. The example or the sentence is often mastered when well read. A few minutes spent on the reading of a lesson when it is assigned will be very helpful in its mastery. The child's own composition affords good reading matter for natural expression.

The best motive in oral reading is expressing the thought to an audience. This motive is lacking when every member of the class sits with open book. Such exercises, however, are invaluable for class drill. The listening audience, the test of reading ability, will be furnished through parallel reading in history and geography.

Works of good literature have been selected for reading in the grammar grades. They should be read for appreciation, not critical analysis. After careful study and reading by the class, new beauty of thought and wording may sometimes be given by the teacher's reading. Avoid subtleties beyond the comprehension of the children. Most of the time should be given to *reading*.

In studying figures of speech show whether used to add beauty or clearness to the thought. Simile and metaphor present two pictures. Make children see both clearly, the points of difference and the one point of resemblance. Use pictures whenever possible. Train children to find and appreciate beautiful word pictures. The music of verse may be shown by a few exercises in scansion.

Supplementary reading in the grammar grades will be taken from the history and geography.

PRIMARY GRADES.

The reading in the first four grades will continue as outlined in the old course of study.

FIFTH YEAR.

1. Wood Folk at School, by Wm. J. Long, and parallel reading in history twice a week throughout the year.
2. State Series Primary History three times a week throughout the year.

SIXTH YEAR.

A.—1. Lays of Ancient Rome (5-cent classics).
2. King of the Golden River (Heath's Home and School Classics).
3.* Lamb's Tales from Shakespeare (Maynard's English Classic Series).

B.—1. Miles Standish (10-cent classics).
2.* Kingsley's Water-Babies (Maynard's English Classic Series).

SEVENTH YEAR.

A.—1. Wonder Book I and II (Riverside Series).
2.* The Coming of Arthur and the Passing of Arthur (Maynard's English Classic Series).

B.—1. Longfellow Leaflets (Riverside Series).
2. Building of Ships and one-half of shorter poems.
3. Rip Van Winkle and Sleepy Hollow (Graham's Practical Aids to Literature No. 1).
4.* Goldsmith's Deserted Village (5-cent classics).

EIGHTH YEAR.

A.—1. Evangeline (Riverside Series).
Graham's Aid in the Study and Teaching of Evangeline is recommended for teachers.
2. Dickens' Christmas Carol (10-cent classics).
3.* Grays Elegy (Maynard's English Classic Series).

B.—1. Snow Bound (Riverside Series).
2. Any one or two of the following to be taken the last half of the term:
A Hunting of the Deer by Warner (Riverside Series).
Shakespeare's Julius Caeser (10-cent classics).

Irving's Alhambra (Macmillan's Pocket Classics).
Thanatopsis (5-cent classics).

*May be taken or omitted at the option of the teacher.

MEMORY SELECTIONS.

Three poems are to be memorized each term. See old Course of Study. It is recommended that pupils purchase Miss Alice Power's Poems for memorizing, which contains the poems required in all the grades.

PARALLEL READING.

Books in sets of five or six will be supplied for parallel reading in history and geography.

The purpose of these books is threefold: to vitalize the texts in history and geography by giving clear, vivid word pictures, to supply good prose for reading to a listening audience, to supply models of style and material for oral and written composition.

The teacher will make a selection pertaining to the day's lesson. A number of the class will read (at sight or after preparation) while the rest listen. Whenever the reading is not heard or understood, the class will raise hands to insure attention, the teacher will question members of class during the reading. On the completion of the reading or a rereading of the whole by the teacher, part of the class will go to the board, while others work at the seats, reproducing what was read, making abstracts, or giving individual discussion of the matter read. This will be followed by oral criticism of the composition. Ten or fifteen minutes daily should be devoted to parallel reading. The writing and correcting may be part of the language lesson. The work in technical grammar has been shortened to allow for more composition. The periods for history, geography and language should be conveniently arranged for this work.

GEOGRAPHY

INTRODUCTION.

Geography treats of the earth in its relation to man. It should give the child many facts useful for business or general intelligence. It should teach him how and where to find additional facts when needed.

These facts, however, should not be isolated, but should be taught in causal relation, thus making Geography elementary science.

The forces of nature control largely geographic conditions, but human influence has nearly or quite as great a place. Man has changed the vegetation and animals of a large part of the globe. The use which man makes of natural resources is governed largely by economic considerations. Thus physical Geography and economics form the background of Geography. These may be taught to children in elementary form.

The forces which have shaped the great features of the earth may be observed all about us. The influence of streams in erosion, transportation and deposit of sediment, the formation of hills, valleys, canyons, deltas, waterfalls, etc., may be as well seen and as well understood in the rivulet as in the mighty river. For the child may in a few minutes trace every part of a river system. Let his imagination magnify this and he has "The Father of Waters." Mapping this outdoor geography first with sand, then with chalk, will give a key to the proper interpretation of maps.

The elements of commerce and of economics are as easily observed as the forms of land and water. The principles governing the commerce of nations are involved in the buying and selling which the child sees daily. Division of labor studied in the most elementary form in the home, the school, establishments of few workmen, and later in larger establishments makes the child understand the cheapened cost of articles produced by the united effort of many skilled laborers. It is then clear that cheapened transportation enables communities to specialize in the production of that article for which their natural conditions are best suited, and that all other articles are obtained most cheaply by exchange. Manufacturing and trade centers follow as necessities from this larger division of labor, and commerce is no longer an independent element, but an outgrowth of all other occupations. History may be seen as an outgrowth, in large part, of geographic conditions.

Maps are used for study and for reference. The study map

should contain but few names. Children should be trained to use reference maps by looking up many map questions which they are not required to remember. All surfaces should be first studied from relief maps. Relief in sand has the advantage that it may be quickly made and cut across with sharp-edged ruler to show slopes. Sand relief maps should give only general features of surface. Do not exaggerate elevation more than is really necessary.

Outline maps without names are useful aids in study. The child may look from his book to the outline map to test his knowledge. Such maps may be put on the blackboard with stencil. Children should not draw maps from the book, copying all the details. Free-hand sketching of maps giving good proportion and most important features is all that should be attempted. This should generally be done with the teacher's drawing as a guide.

Product maps may be made on the blackboard or black paper with colored crayons. These should give only the most important products and their general distribution. Children must understand that the color used in a region represents the thing produced there in excess of local needs. Everything produced cannot be represented. The area of a product is indicated by the extent of space colored, the quantity of product may be indicated roughly by the amount of color put on that space.

The following colors are suggested for product maps, others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruit, pink; dairy products, white streaked; petroleum, dark gray.

Many maps not furnished by the school will be found useful to the teacher. These may be made with crayon on black paper and used again and again. Such are maps representing winds and ocean currents, rainfall, temperature, population, products and trade routes. Some of the maps in the books will be more useful if thus enlarged, so that the entire class may see them at once.

The Introductory Geography is used at first as a guide to the teacher only. Its earlier pages contain much matter not especially adapted to our schools. Teachers, however, will get suggestions by reading over these pages.

The Grammar School Geography is both a text-book and a reference book. The large print contains matter which every intelligent person should know. The fine print should be read in class and discussed with open book, but should not be learned. The child will thus have some acquaintance with this material and know where to find it when needed. The matter contained

in the large print should be impressed upon the mind by vivid concrete pictures supplied by parallel and supplementary reading. (See Parallel Reading.)

The facts of Physical Geography are told in their special application to each continent studied; the explanations are left for the Eighth Grade, where Physical Geography is made a special study.

GEOGRAPHY.

B SECOND GRADE.

Eight points of compass.

Name and directions of streets immediately about the schoolhouse.

Give first impressions of mile and half mile by distances to well known places.

Have children estimate distance to a few places in the city.

Study, by observation, hills and valleys nearest the schoolhouse, then model the same in moist sand. Do not over-exaggerate elevation.

Study map of San Francisco. If possible let first impressions be given from map in horizontal position correct with points of compass. The map is a picture of the city as it might be seen from a balloon; locate important places; Market street, Ferries, Presidio, Golden Gate Park, City Hall, the schoolhouse and others near the school.

A THIRD GRADE.

Study (from observation as far as possible) soil, hills, mountains, valleys, rivers, ponds and lakes, the bay and ocean, peninsula, island, cape. (Refer to Introductory Geography. State Series Part I, Sections 1 to 8.)

From blackboard and sand table teach principal points of San Francisco, San Francisco and San Pablo Bays, the peninsula as far south as San Jose, the Alameda and Contra Costa Counties shore line back to and including the mountain range, and the Marin County peninsula. The sand relief maps should show the outlines of the two arms of the bay, the coast line, the upper part of the Santa Clara Valley, the Golden Gate, Mt. Tamalpais, Angel Island, Alcatraz Island, Goat Island, Farallone Islands, Oakland, Berkeley, Alameda and Sausalito. (See Introductory Geography, 255 to 258.)

During the rainy season study the effects of stream erosion, transportation and deposit of sediment. Streams are rivers in miniature having source, mouth, banks, bed, rapids, falls, deltas,

basins and divides. The forces that work in great rivers may be seen in the streams about our schoolhouses. The teacher may draw map of locality indicating these streams. Knowledge thus gained may be applied to the interpretation of maps. The study of the small stream which the child sees gives a key to the river which he cannot see. Tarr's Physical Geography, Le Conte's Compend of Geology, and Fairbank's Home Geography will be suggestive to the teacher.

Teach natural features of the Bay Counties from map or sand table. (Refer to Part I, Sections 1 to 8, in Introductory Geography, as far as can be applied.)

B THIRD GRADE.

Continue the study of Outdoor Geography begun in A Third Grade.

Teach orally simple applications of division of labor seen in the family, the school, a small store, a street car and the erection of a building. Note that each laborer becomes very skillful by confining himself to one thing, and that many laborers combine their efforts to produce the better or the cheaper article. Note what each laborer performs in the erection of a building. Where do the materials used in the building come from and how are they transported? What articles of food and clothing does the city obtain from the country? What does the city do in return for these articles? Talk of a few manufacturing or wholesale houses nearest your school.

Sections 3 and 5, Introductory Geography (State Series).

If time permits teacher may read to the children Jane Andrew's Seven Little Sisters.

A FOURTH GRADE.

Discuss division of labor in some larger establishment, such as Cannery, Iron Works, Woolen Factory, Planing Mill, Department Store, etc.

Continue the study of Outdoor Geography. By questions direct observation of natural phenomena.

Introductory Geography, Part I, Sections 7, 8 and 9, book in the hands of the children.

The Bay Counties: Product regions, indicated by colored areas on the map; dairy products, fruit, wine, grain, etc.; locate trade center for each product area; teach railroad and water communication; chief market for each product; what is received in exchange.

Measure distances by using scale of miles, but do not memorize distances.

STUDY OF CALIFORNIA.

1. Present relief map of California on the sand table correct with points of compass. Do not over-exaggerate relief. Cut map to show slopes; elongated profile of cut section reducing elevation, drawn by teacher on blackboard. Draw east and west profile on east and west board, north and south profile on north and south board. From relief have children study mountains, valleys, slopes, etc.; locate drainage basins and rivers.

2. On relief and wall map locate Cape Mendocino, Point Reyes, Point Arena, Point Conception, Humboldt Bay, San Francisco Bay, Santa Cruz Bay, San Pedro, San Diego Bay.

3. Put on board a map showing prevailing winds, temperature and rainfall. (See California section of the Climate and Crop Service of the Weather Bureau.)

4. Show board or wall map and call attention to rivers and lakes resulting from rainfall and slopes.

5. Teach location of Sierra and Coast Range Mountains, Mt. Tamalpais, Mt. Diablo, Mt. Hamilton, Mt. Shasta and Mt. Whitney; of Sacramento, San Joaquin and Klamath Rivers; of Lake Tahoe and Lake Tulare.

If time permits the teacher may read Aunt Martha's Corner Cupboard to the class.

B FOURTH GRADE.

6. Review California studied in previous grade.

7. Teach children to trace California freehand, putting in locations learned in A Fourth.

8. In oral discussion have children trace California products found in our stores and markets to parts of State from which they come; fruits (apples, oranges, cherries, grapes, etc.), nuts, raisins, beans, butter, meat, flour, lumber, gold.

9. Make progressive product map, using colored crayon. Discuss regions in which each article is produced and climate essential to it; use pictures and give vivid word pictures of each product region; then teacher color the area on blackboard map, children coloring at blackboard or seats. Why does each region produce chiefly one article? How are other articles secured more easily by exchange? Explain economy in this large division of labor. Compare Robinson Crusoe, Colonial life, life among the Indians.

10. Show growth of trade center in each region (transportation and commerce as producers of wealth).

11. Exchange of goods by railroads, boats, etc.

12. In a broad view of the State, what do we produce more than we need? Where do we send it? What do we get in return? Teach San Francisco as the trade center for *the State.*

Introductory Geography, pages 92 to 119, in the hands of the pupils.

13. Use scale of miles to measure distances in the State, but do not commit to memory.

If time permits read from Chamberlain's How We Are Fed, The Past and the Present, the Story of a Loaf of Bread, How Our Meat is Supplied, Market Gardening, Dairy Products, Butter Making, the Orange Groves of Southern California, A Visit to a Vineyard.

Use text, pages 257-283, for reference.

A FIFTH GRADE.

Introductory Geography, pages 119 to 124. If time permits teacher may take Section 4, Part II, or may read and explain to class without having them learn.

NORTH AMERICA.

1. Locate North America on the Globe; note its relation to the Equator, Tropic and Arctic Circle, to other Continents and to the Oceans.

2. Present North America in relief on the sand table, and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief. Teacher draw elongated profiles of the relief. (See California A Fourth Grade.)

3. Tell facts of ocean currents, winds, pertaining to North America. Do not explain winds and currents. Indicate on blackboard map prevailing winds and ocean currents. (See Grammar School Geography, pages 26 and 27.)

4. Put on blackboard rainfall map. (See Grammar School Geography, State Series, page 46.)

5. Compare winds and currents, rainfall map and relief map. Where will there be most rivers? In what direction will they flow? Look at wall map. Confirm conclusions.

6. Now study map questions and political divisions on pages 139 and 140.

BROAD STUDY OF UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole. Then as each section is studied its relations to other sections and to the whole will be clearly seen.

Apply on a still larger scale division of labor. This principle has been seen in the Home Geography, in the building of the house, and in the manufacturing establishment. In these each workman was a skilled specialist. In the study of the State, labor was divided among communities according to natural resources, each locality becoming skilled in the production of a special commodity

From previous study review climate, drainage and soil of the United States.

Trace California products to Eastern markets, thus enlarging the geographic horizon through home interests. What do we receive in return? Where produced?

On the blackboard map mark product regions of the United States, using colored crayons. Begin with most prominent products of California as wheat, livestock, lumber, fruit. As far as time will permit give vivid pictures of each region studied. Tarr and McMurray's Geography, Book II; Carpenter's North America, King's Picturesque Geographical Readers, Youth's Companion Reprints (except article on raisins) contain good illustrations and word pictures.

What advantage has each section in soil and climate for its product? How and where obtain other products in exchange? Locate trade center in each region. What are its advantages as a trade center? Put in the great continental lines of railroad These railroad lines are as important in the map as rivers or coast lines.

The area of a product is indicated by the extent of space colored; the quantity of product may be indicated roughly by the amount of color put on that space.

In a general view of the map what things are produced in excess of our own needs? Show Boston, New York, Philadelphia, Chicago, New Orleans, San Francisco, Seattle as trade centers for the country as a whole.

Do not teach boundaries, do not teach capitals unless important as trade centers. Children should be able to point, on outline map, to any State named by the teacher, or to name any State pointed to. Children should be able to locate any State in its product region or regions, but should not learn list of exports and imports for each State.

Study United States by sections from pages 140 to 188. Fine print (except review questions) may be omitted or read only.

If time allows read to the class in connection with the proper groups of States the following chapters from Chamberlain's How We Are Fed: Cheese, Fishing Industry, Oyster Farming, A Rice Field, How Sugar Is Made (Cane Sugar, Beet Sugar, Maple Sugar), Salt, Cranberry Bog, Nutting, A Walnut Vacation.

In all the work from Introductory Geography, fine print, except review questions, may be omitted or used merely as reading matter.

Parallel reading for this grade will be found in Our Own Country. For method of this see Parallel Reading.

B FIFTH GRADE.

Complete North America. Introductory Geography, pages 188 to 198.

Make product map of Canada, similar to the United States, indicating grain, livestock, lumber, coal and iron, fisheries, gold and any others teachers may desire. In similar manner make product map of Mexico.

Complete the Introductory Geography, giving special attention to South America and Europe and to India, China and Japan in Asia. If time permits Africa and Australia may be studied from the book or used only as reading matter.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with North America. Cut the sand map, so that the profiles will show slopes. The teacher may draw elongated profiles on blackboard.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on blackboard (Grammar School Geography, page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. (Afloat in the Forest contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make freehand sketch of South America, putting into each map, in addition to coast line, mountains and rivers, the Equator, Tropics, ocean currents and prevailing winds. Children draw not from book or wall map, but from teacher's drawing.

9. Make colored product map, showing forest products, grain, livestock, minerals, coffee, rice.

10. Difference between North and South America, in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. North America was settled chiefly by Germanic races from the north of Europe and South America by Latin races from the south of Europe. Contrast the two continents in physical features. Give briefly history of South America and compare with North America. Tell children of the early civilization of Ecuador and Peru.

11. Study specially Brazil, Argentina and Chile: the other countries may be passed over lightly.

12. From Chamberlain's How We Are Fed read, as time permits, On a Coffee Plantation, A Cup of Cocoa, A Bunch of Bananas. For parallel reading Our American Neighbors.

EUROPE.

Study Europe after plan similar to that for South America. Children need not draw Europe. The teacher may omit the product map. The general product map of Europe, page 120, and the rainfall maps, pages 26 and 114, of Grammar School Geography, may be found useful.

The teacher should give briefly a bird's-eye view of the great historical movements of Europe, from Egypt to Greece, Greece to Rome, Rome to the nations of modern Europe, from Europe to America. As the more important nations are studied touch briefly upon their history and place in the world's progress. This work should be given orally and children not required to learn it, as its aim is simply to awaken historical interest. It should not take much time.

Study Europe in the text-book.

ASIA.

Treat Asia in similar manner, putting special stress on Physical Geography, India, China and Japan and Siberia. Other parts of Asia may be passed over lightly or omitted.

AFRICA AND AUSTRALIA.

If the work seems too crowded these two continents may be omitted, as they will be taken more fully in succeeding grades.

Fine print, except review questions, may be taken or omitted at the discretion of the teacher. Parallel Reading, Our American Neighbors, and Modern Europe.

SIXTH YEAR.

The main work of this year will be the study of the United States in the Grammar School Geography.

The teacher may enlarge maps on pages 26 and 27, explain their meaning and keep them for reference with each continent studied.

NORTH AMERICA.

1. Locate North America on the globe with reference to Equator, Tropic and Arctic Circle.

2. Present N. A. in relief on the sand table, and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief. Draw elongated profiles of the relief.

3. Tell facts of ocean currents and winds pertaining to N. A. Do not explain winds and currents. Study from the map winds and ocean currents, pages 26 and 27.

4. Study rainfall map, page 46.

5. Compare winds and currents, rainfall map and relief map; where will there be most rivers? In what directions will they flow? Now look at wall map. Test conclusions.

6. The class is now ready for the general study of N. A., pages 45 to 49.

BROAD STUDY OF UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole.

Then as each section is studied, its relations to other sections and to the whole will be clearly seen.

Continue to apply on a large scale the principle of division of labor. (See previous grades.)

From previous study review climate, drainage and soil of U. S., dividing it into natural regions.

Make product map of U. S., using colored crayons. Give pictures of life and industry of each section. Show how each section is best suited to its product and how other things are obtained by exchange. Make distinction between raw material and manufactured goods. Show how power is obtained for manufacturing, largely now from steam and electricity instead of water power. What goods are shipped as raw material, and what as manufactured? Show necessity for trade centers in product regions. What advantage has each for transportation and manufacture? Which are chiefly manufacturing and which distributing points? Put into map on blackboard important railroad lines connecting trade centers. How connected by water?

In outline map, children should be able to point to any State named or name any State pointed to. They need not learn boundaries, need not learn capitals unless important as trade centers. They should be able to tell from memory in what product region or regions each State is located, but should not learn list of exports and imports for each State.

Children need not memorize figures or statistics regarding products. In the colored product map each product is indicated in the region in which it is dominant; the color does not indicate that nothing else is produced within that region. Product regions often overlap.

The following colors are suggested for product maps, others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures,

light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruits, pink; dairy products, white streaked; petroleum, dark gray.

The class will now study from the book, pages 49 to 62.

STATES BY GROUPS.

After this broader survey of U. S., States may be taken by groups as presented in the book. As each group is studied its relation to the whole will be better seen. From the product map it will readily appear where New England secures its raw material for manufacture and where it finds its markets; where the Mississippi Valley sells its breadstuffs and meats and where it secures its manufactures. Keep these broader relations in mind, using details to impress general principles. Children may read all the text, but should not commit it to memory. They should know how to use text and maps for reference in case of need. The coarse print only should be learned, but even this contains too many details. Take only the leading cities and occupations in each State or section. A few examples will illustrate. The book describes thirty-eight cities in New England. Do not have all these learned. Instead impress upon the minds by parallel and supplementary reading a great trade center (Boston), a manufacturing city (Lowell), a lumbering city (Bangor), a fishing center (Gloucester). Vivid pictures of these will remain long after names are forgotten. Instead of memorizing what is said of the seven cities of Pennsylvania, give a few graphic word pictures of its coal and iron industries. No amount of hard work on the part of the teacher can make children remember long and dry statements of facts about seven cities of Illinois, but a good description of the great stock yards, a grain elevator and a wheat farm will make a lasting impression. In Texas omit less important cities and the minor occupations, but bring out strongly in the supplementary reading cotton raising, grazing and the great oil wells. In Colorado, gold mining, the great trade centers of that region and the clear, pure air are the important topics. In the State of Washington the child should have impressed upon his mind the magnificent forests and the rapid growth and outlook of the metropolis of Puget Sound.

A SIXTH GRADE.

Take to Northern Section, page 66, preceded by brief review of California.

B SIXTH GRADE.

Take to countries north of United States, page 93. Take broad view of the industries of the United States and of its domestic

commerce. (See Supplement to the Geography, Maps II to XI.) Looking at the product map, what articles do we produce in excess of home needs? Where do these find a market? What important articles do we not produce? From what countries are they imported? What great trade centers are built up by this foreign commerce? What are their special facilities for trade? The study of cargoes from the shipping news will be of great value in impressing our foreign commerce.

Parallel Reading for the Sixth Year will be found in Carpenter's North America and Tarr and McMurray's Geography, Book II. Good supplementary reading is contained in Our Own Country and King's Picturesque Geographical Readers.

SEVENTH YEAR.

The work of this year will be the study of our American neighbors (Canada, Mexico and Central America, Cuba, South America), Europe and Asia.

A SEVENTH GRADE.

Follow the same general plan as used for United States for the study of other countries of North America.

Compare government of Canada with United States. Explain "local self-government." How does this keep Canada loyal? England learned the lesson of local self-government for her colonies by the American Revolution. What would the result have been had England granted local self-government to her thirteen colonies? Correlate with history. Present through talks and parallel reading. Do not give additional matter to be memorized.

In similar manner contrast government of Mexico with United States. The difference in success of the two republics is largely a difference of race. The life of President Diaz is full of thrilling incidents. If time permits, this would be an interesting subject for biographical composition. The mere telling of the story to the children will appeal strongly to the heroic in them.

Read pages 100a to 100d.

In taking up South America, follow the outline below.

SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with

North America. Cut the sand map so that the profiles will show slopes. Draw elongated profiles on blackboard.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature, and rainfall maps on blackboard (page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. ("Afloat in the Forest" contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make free hand sketch of South America putting into each map in addition to coast line, mountains, and rivers the Equator, Tropics, ocean currents and prevailing winds. Children draw not from book or wall map but from teacher's drawing.

9. Make colored product map showing forest products, grain, live stock, minerals, coffee, rice.

10. Difference between North and South America in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. North America was settled chiefly by Germanic races from the north of Europe and South America by Latin races from the south of Europe. Contrast the two continents in physical features. Study history of South America from a text-book. Supplement by outside reading. Compare with North America. Tell children of the early civilization of Ecuador and Peru.

Refer to Chamberlain's How We Are Fed; read, On a Coffee Plantation, A Cup of Cocoa, A Bunch of Bananas.

Compare product maps of North and South America. What things do we receive from South America? What do we send to South America? In what do we compete with Europe in South American markets? (Manufactures.) In what do we compete with South America in European markets? (Grain and grazing products.) How is this commerce carried on?

After this broad study of South America the class is ready for the text. This is to be used in the manner suggested for sixth year.

Bolivar is a striking figure in the history of South America. If time permits study this character contrasting with Washington.

EURASIA.

Find on the globe and note north and south, east and west extent. Study rainfall and temperature and ocean currents, but do not explain causes. Eurasia need not be modeled in sand, as children are now able to interpret map forms. Show a printed

relief map (Frye's Geography) and be sure that children can interpret the physical map.

Be sure the children understand the meaning of maps on page 114. Teacher need not make colored product maps of Eurasia. Children can now interpret printed page without such aids.

Study Eurasia from the text, page 113-117.

Parallel Reading, Our American Neighbors (borrow from 5th grade), North America (borrow from 6th grade), Tarr and McMurry's Geog., Book III. Carpenter's South America contains much valuable material.

B SEVENTH GRADE.

EUROPE.

Give as much attention to the history of Europe as time will permit. (See Fifth Grade.) The purpose is not to memorize facts of History, but to awaken historic interest. Many of the children will not attend high school, and so will miss systematic study of European history; but interest awakened in Geography may lead to subsequent reading. It may be possible here to awaken some interest in literature and art.

It is not necessary to make relief or product maps, though colored crayons might perhaps impress the products of certain sections. Products may be somewhat generalized as on page 120.

Tell the facts of prevailing winds, etc., and let children explain climate of different parts of Europe. Contrast with United States.

Study the text for Europe, using the fine print for reading matter, the large print for study and vivifying with concrete pictures and good descriptions from parallel and supplementary reading. Try to bring children into vital touch with life and conditions of the old world. The Minor Balkan States may be read, not studied.

Make clear the division of labor among communities according to natural resources or advantages, and the necessity of exchange resulting from such high specialization. Bring out European trade with North and South America. Contrast conditions of life in European countries with conditions in our own country. Contrast governments with government of United States. In what respects is United States superior and to what does it owe its superiority?

ASIA.

Relief and product maps for Asia need not be made, though graphic illustrations with colored crayons may sometimes be

useful. Make clear the facts of physical geography necessary to understand the climate of Asia. Give as much of the history of the great peoples of Asia as time will permit.

Use the large print for study, read the fine print. Read Afghanistan, Baluchistan, Persia, Indo-China, but do not learn.

Emphasize our commercial relations with China and Japan. Explain the "Eastern Question," and the question at issue between Russia and Japan.

Parallel reading will be found in Toward the Rising Sun, Under Sunny Skies, Northern Europe, Modern Europe (borrow from Fifth Grade). Carpenter's Europe and Carpenter's Asia will be found useful for reference.

EIGHTH YEAR.

The work of this year will include a somewhat careful study of Africa, Australia, and the Islands of the Pacific; a study of California and its commercial relations; a brief survey of the commercial geography of the world, and of physical geography.

A EIGHTH GRADE.

AFRICA.

Study wind, current and rainfall maps with reference to Africa. Compare rainfall map of Africa and South America. Explain the difference. Compare the Mississippi, the Amazon, and the Nile with reference to length, volume of water, tributaries. Give reasons. Compare North Central Africa, Mississippi Valley, Amazon Valley with reference to rainfall, climate, vegetation, etc. Contrast Africa north of the Equator with Africa south of the Equator. Reasons.

Interest children in the ancient history of Egypt. Bring out recent modern progress in South Africa.

Give some account of great African explorers. From Africa's recent modern development judge of its future.

Parallel reading from Tarr and McMurry's Geog., Book III. Good supplementary reading will be found in Book VII of The World and Its People Series, Views in Africa; also in Carpenter's Africa.

AUSTRALIA AND ISLANDS.

Make a careful study of Australia, its physical features, its climate, peculiar animals and plants, its industries, its history, people, and government.

Contrast the constitution of Australia under its recent Federation (local self government) with that of United States.

Bring out the social and industrial conditions of New Zealand.

Bring out the rapid development of Australia and New Zealand and their rising importance.

Parallel reading, Carpenter's Australia and Tarr and McMurry's Geography, Book III. Australia (The World and Its People Series) contains much interesting matter on the Islands of the Pacific.

CALIFORNIA.

Make a thorough study of California, giving special attention to its industries and commerce. Trace the products of California to the markets of the world. This prepares for a general review of the industrial and commercial geography of the world. Enlarge this subject as much as time will permit. Show division of labor in its largest relations,—what each nation does to meet the world's needs, and how these commodities are exchanged.

Use colored product maps of the world as far as possible, showing how success or failure in one part of the world affects other parts; how failure of wheat crop in Argentina raises price of wheat in United States. Refer to commercial maps in the appendix of Geography, Adam's Commercial Geography and Trotter's Geography of Commerce.

Fairbank's California (McMillan Co.) contains much information in most convenient form. Take text on California in back of Geography, omitting fine print at discretion of the teacher.

B EIGHTH GRADE.

This term will be given to the study of Physical Geography. The children have learned many of the facts of Physical Geography, and have applied them in the study of the continents, but have not had explanations. Use the Grammar School Geography, pages as a text, referring, where fuller statements are needed, to Tarr's Physical Geography. This term's work will give a more complete view of the earth as a whole, and will constantly refresh in the minds of the children what they have learned in previous grades. It will lay a foundation for the sciences to follow in the High School.

HISTORY AND CIVICS.

HISTORY.

PURPOSE.—The Course of Study in United States History has been outlined for the purpose of developing an interest in the history of human affairs, particularly as that history has developed on the American Continent. To this end an attempt will be made to give the children a knowledge of and a feeling for the personalities, events and movements of American History.

METHOD.—Upon the interests of children as we find them we must graft a more mature historical interest. Children are interested in biographical stories, consequently the work of the Fourth Grade, where History first appears as a regular subject, should be an introduction to history through its great men. In the Fifth Grade events and movements can be grouped around the lives and actions of historic personages, and finally, beginning with the Sixth Grade, the larger movements and situations of history may be studied directly, the biographical and narrative elements still being used to vivify the facts learned.

TEXT-BOOKS.—No text-book will be used in the Fourth Grade. In the Fifth Grade *The Introductory History* (California State Series) will be used as a History Reader. In the Sixth, Seventh and Eighth Grades the children will use as a text in their own hands *The New Grammar School United States History* (California State Series). It is not intended that the text-book simply should be studied, but that the *subject* should be studied with the aid of the text-book.

PARALLEL READING.—Each class is supplied with books for Parallel Reading. The five books supplied are to be used by various groups of children in turn, the children reading aloud to the class, or reading and reporting to the class on the material assigned by the teacher. This material is to be treated the same as that obtained from the text or presented by the teacher, being discussed, explained and, finally, reproduced in the *child's own language*. The history material given in the Parallel Reading forms an excellent basis of fact and feeling for composition work. The *aims of history* rather than composition should be dominant in the treatment of the material during the history period. (See PARALLEL READING.)

SUPPLEMENTARY REFERENCES.—In the Sixth, Seventh and Eighth Grades Fiske's *History of the United States* (Houghton-Mifflin) and Sheldon-Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference.

The purpose of Parallel Reading and Supplementary References is not so much to add new facts of history, but rather *to give life and interest* to those contained in the text.

Training to Study.—History, because of the amount of reading done by the child, affords one of the best opportunities for teaching children to study. To study a subject means to discriminate between facts of greater and less importance and to relate these ideas to one another. Many lessons, particularly in the last three grades, should be given with open books or outlines, noting that the large or main topics are the epitomes of whole movements, and that the lesser or sub-topics are epitomes of lesser movements, which grouped together make up the larger movements, or main topics. Children should be taught to find the main thoughts of the paragraphs they read, relating them to each other, finally reproducing in their own language. With open books study maps and pictures.

Topics.—Certain parts of history are more important than other parts. Consequently some parts need to be studied, some merely read, and some entirely omitted. Large movements, and the causes and results of great events are most important, while the details of wars and battles and minor events are of least importance. Many military, political, legal and economic facts of history are too difficult for the comprehension of children. Where such is the case the children should merely read, the teacher summarizing for them at the close. The work of the Sixth, Seventh and Eighth Grades is given under each grade by main and sub-topics, arranged with difficulties of the text-book and the above ideas in mind. These topics represent the central ideas to be understood and remembered, the details given in the text and other books are read only to make these central ideas clear. The details of battles, campaigns, wars and the details of most political, legal and financial measures being too difficult for the child to comprehend in their right relation and significance, should not be studied and memorized. Where these *facts as a whole* have an important bearing on history, the teacher should summarize their influence and present to the class.

In assigning a lesson, make the assignment by a definite subject or topic, not by a certain number of pages. All reading or study, however broad, should be done to a point.

CIVICS.

Purpose.—The purpose of Civics is to give the children definite and concrete ideals and standards of conduct with relation to the affairs of human society, and to give them a knowledge of those forms and functions of government which they need to understand in the exercise of political privileges and duties.

MATERIAL.—The best material for Civics is the concrete biographical material of history, and the personal and civic aspect of history should receive attention wherever the material permits. Certain material is outlined from grade to grade for the convenience of the teacher. As a reference book in the hands of the teacher, use Dole, the American Citizen (Heath).

A FOURTH GRADE.

The hero tale and history tale have been used in the preceding grades as material for reading and oral language. History as a subject appears for the first time in this grade. The method of instruction is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The use of some simple historical reading is supplemental to the teacher's oral presentation. The work of this year offers two parallel approaches to the later study of history: *biographical history* and *local history*.

BIOGRAPHICAL HISTORY.—The biographical history will be covered by the stories from American colonial and pioneer life selected from the books here mentioned, or from such other material as the teacher may choose to use for her story telling. Pratt's *Stories of Colonial Children* (Ed. Pub. Co.) and *Stories of American Pioneers* (Ed. Pub. Co.) are to be used to supplement the oral presentation. These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

LOCAL HISTORY.—The local history to be studied is that of San Francisco and its immediate vicinity. It should be presented in close connection with the work in home geography. The children may read "The Story of San Francisco" in Sexton's *Stories of California* (Macmillan), pages 169-179. For further material the teacher may refer to Wagner's *Pacific History Stories* (Whitaker & Ray), Hood's *Tales of Discovery on the Pacific Slope* (Whitaker & Ray), Powers' *Historic Tales of the Old Missions* (Brunt).

All schools should not study the same local history topics. The spots of historic interest are not equally known and available to the various children, nor are they equally significant in the history of San Francisco. Two lists of topics taken from Mrs. O'Neal's *Topics for Local History Work* are suggested. The first should be used by all schools. From the second, four or five particular topics should be selected by particular schools, as the material for study and observation is within reach of the school or of peculiar significance to that portion of the city.

TOPICS FOR GENERAL USE.

1. Indians who once lived here; their former modes of life.
2. The Spaniards; where from, and reasons for coming to this peninsula.
3. The Mission Dolores; location and description of church and cemetery.
4. Conditions (geographic, climatic) which made San Francisco a favorable place for settlement.
5. Houses of Spaniards; of what constructed, how built and how covered.
6. Occupation of the people who came here first. Small settlements.
7. The Presidio; location and present use; meaning of word; how used by Spaniards.
8. The American settlement at Yerba Buena; location and occupation of the people.
9. Telegraph Hill, Russian Hill, Rincon Hill and Bernal Heights; manner in which names were obtained and use in early days.

TOPICS FOR SELECTION.

1. Portsmouth Square; a few of the historical scenes of which it was the center.
2. Meiggs' Wharf and Long Wharf; their importance in early days.
3. Mission Creek and Potrero; situation and use.
4. Location of first house built by an American (Captain Richardson); location of American settlement.
5. Population in 1842 (50) and in 1860 (50,000); cause of the rapid increase. The effect of the discovery of gold on the development of the city.
6. Streets named for pioneers; streets which have been built on land filled in, and where the bay formerly came; change in the water front.
7. Old houses now standing that came around The Horn.
8. Opening of Market street; steam paddy; leveling of the sandhills; development of the Western Addition; horse cars, cable cars and electric cars.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

CIVICS.—Wherever the history material permits emphasize the personal qualities manifested in the lives of great men which have contributed to the country's welfare.

Bring to the attention of the children by talks and discussions some of the easily understood principles of government, such as

1. The meaning of the word "government" and the necessity for some form of it.
2. The family and its government.
3. The schoolroom and its government.
4. The playground and its government.

See Dole, *The American Citizen* (Heath), Chapters I, II, III.

B FOURTH GRADE.

The method of history instruction in this grade is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The reading of simple historical stories by the children is supplemental to the teacher's oral presentation. The work of this grade continues the two parallel approaches to the later study of history: *biographical history* and *local history*.

Biographical History.—The biographical history will be covered by the stories from American colonial and pioneer life selected from the books here mentioned or from such other material as the teacher may choose to use for her story telling. Eggleston's *Stories of Great Americans for Little Americans* (Amer. Bk. Co.) and Eggleston's *Stories of American Life and Adventure* (Amer. Bk. Co.) are to be used to supplement the oral presentation. These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

Local History.—The local history to be studied is that of California, with such Pacific Slope history as is necessary to give a proper setting. It should be presented in close connection with the study of the geography of the State. The children should read Sexton's *Stories of California* (Macmillan). This may be done as with the biographical history, by allowing a group of children to read a single story, presenting it to the class. The teacher will find further material for her own presentation in Winterburn's *The Spanish in the Southwest* (Amer. Bk. Co.), Wagner's *Pacific History Stories* (Whitaker & Ray) and Powers' *Historic Tales of the Old Missions* (Brunt).

The following topics are suggested and should be among those receiving attention:

1. Voyages of Balboa, Magellan and Drake.
2. Cabrillo's discoveries along the Pacific Coast.
3. The discovery of San Francisco Bay.
4. The Indians of California; their former modes of life.
5. The founding of the Missions. (Indicate location on an outline, sandboard, or wall map, and on the map of the State Elementary Geography, page 28. Use pictures of a few Missions.)

6. The Mission Indians; manner of living; treatment by the Spanish.

7. Towns founded by the Spanish about the Missions; mode of life among the early Spanish families.

8. How California became a part of the United States; capture of Monterey and San Francisco.

9. Occupation of Americans who came before 1848; trade in hides, tallow, etc.

10. Discovery of gold; mining excitement; ships to San Francisco and rush to the mines; rapid growth of the city; mixed population; lawlessness; vigilance committees.

11. The Donner party as typical of crossing the plains.

12. Other ways of coming to California in the early days.

13. The opening of the first transcontinental railway.

14. The change from a mining to an agricultural State.

Holidays.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

Civics.—Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men, which have contributed to the country's welfare.

Continue the talks and discussions on some of the easily understood principles of government, such as,—

1. The idea of a city and its government.
2. The idea of a State and its government.
3. The idea of the government of our country.
4. Titles and names of the chief officer in each of the three.

Correlate with geography. Consult Dole's *The American Citizen* (Heath) for ideas as to this work.

A FIFTH GRADE.

In the preceding grades the work has been largely biographical.

In this grade the work is to take on a larger range of facts and events. The biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than before. The *Introductory History* (California State Series) is to be bought and used through the story of Washington, page 186. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text, though pupils should be able to reproduce, orally, the substance of the stories. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

Moore's *Pilgrims and Puritans* (Ginn) is to be read by the children as parallel reading. Have four or five children read a story in Moore and then tell it to the class, or have each one of a group read part of the story aloud to the class. The teacher may supplement orally from any other material she may choose.

Correlate the history work with that of geography by looking up the localities mentioned.

Civics.—Wherever possible, get a standard and ideal of conduct from the life of the great Americans treated in the history reader, such as William Penn, Benjamin Franklin and George Washington.

Discuss the necessity of government in connection with the story of John Smith, the Landing of the Pilgrims, and others. In connection with the colonies, discuss, in simple terms, local government as found in the colonies and centralized government as found in the King and Parliament.

B FIFTH GRADE.

In the history work of this grade the biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than in the fourth grade. The *Introductory History* (California State Series) is to be bought and completed from page 187. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text. The work of the teacher should be to bring out and reinforce the pictures drawn so as to enrich the mind of the child.

The amount of oral presentation of history stories by the teacher, the characteristic method of the fourth grade, is much lessened in this grade, and the amount of parallel reading is increased. Moore's *From Colony to Commonwealth* (Ginn) and Blaisdell & Ball's *Hero Stories from American History* (Ginn) are to be read by the children as parallel reading. The stories in these books may be read aloud, or read and told to the class, by various groups of children.

Correlate the history work with that of geography by looking up the localities mentioned.

Civics.—Wherever possible get a standard and ideal of conduct from the lives of great Americans treated in the history reader, such as George Washington, Daniel Boone, Andrew Jackson and Abraham Lincoln.

In connection with the chapter on the Revolution, discuss the following topics in simple form:

1. Who makes the laws and by what right.
2. The right of the King and Parliament to govern America.
3. The state governments of the free colonies and why they joined in a national government.

A SIXTH GRADE.

With this grade a more systematic study of American History begins. In the previous grades, the biographical element was dominant. Now the larger movements of history are studied directly as such, though biographical and narrative material are still to be used to make the material studied real and interesting.

The work of this grade will cover the following movements or large topics:

I. Europe finds America.
II. Spain takes possession of the new world.
III. England rivals Spain and plants herself on the Atlantic Coast.

The *New Grammar School U. S. History* (California State Series) is used for the first time in this grade. The topics cover the first fifty-nine pages. The numbers in parenthesis refer to the sections in the State History:

For parallel reading this grade will use Hart's *Colonial Children* (Macmillan). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of story.

Fiske's *History of the United States* (Houghton-Mifflin), Sheldon-Barnes' *Studies in American History* (Heath) and Hittell-Faulkner's *Brief History of California* (Stone Educ. Co.) may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

I. Europe finds America (Fiske, 19-37) (Sh.-Brns., 19-31) (Hittell, 1-4).
   1. The problem of the Trade Route to the Indies (2, 3).
   2. Columbus sails West to reach the East and finds America (4).
   3. The Cabots follow Columbus for the English (5).
   4. Vasco da Gama goes around Africa to India (5).
   5. Amerigo Vespucci gives his Name to America (6).
   6. Balboa discovers the Pacific Ocean (7).
   7. Magellan's Ships sail round the World (8, 9).

II. Spain takes Possession of the New World (Fiske, 40-46) (Sh.-Brns., 31-41) (Hittell, 5-31, 45-67).
   1. Cortes conquers Mexico (11).
   2. De Vaca leads Narvaez's Men across the Continent (11).

3. Fray Marcos and Coronado seek the Seven Cities of Cibola (12).
4. De Soto leads the Spaniards across the Mississippi (13).
5. The Spanish establish Missions and Colonies (13, 14).

III. England rivals Spain, and plants herself on the Atlantic Coast (Fiske, 59-152) (Sh.-Brns., 41-45, 57-61, 65-73, 77-87, 92-100) (Hittell, 32-44).

1. Sir Francis Drake sails up the Pacific Coast (15).
2. Sir Walter Raleigh and others try to colonize America (1618).
3. The English start a Colony in Virginia (19-24).
4. The Dutch and Swedes plant Colonies that interfere with England's control (27-29).
5. The Planting of New England.
   a. Plymouth (30-34).
   b. Massachusetts Bay (35-38).
   c. New Hampshire and Maine (39).
   d. Rhode Island (40, 41).
   e. Connecticut (42).
   f. New Haven (43).
   g. The United Colonies of New England (44, 45).
6. England extends her Colonies at the South.
   a. Maryland (25, 26).
   b. The Carolinas (47).
7. England unites her Colonies by annexing the New Netherlands (48).
8. English Colonization continues.
   a. New Jersey (49).
   b. Pennsylvania (50).
   c. Delaware (51).
   d. Georgia (52).
9. The Thirteen English Colonies (53).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The devotion of Columbus to a scientific idea.

The missionary work of the Spanish priests among the Indians.

The religious devotion of the Pilgrims.

The religious tolerance of Roger Williams.

The various forms of government represented in the colonies and the mother countries might be brought out, discussing particularly the monarchical form of government.

B SIXTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi.

V. The Struggle between the English and the French.

VI. The Disagreement of the English Colonies with the Mother Country.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 60 to page 123. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Camps and Firesides of the Revolution* (Macmillan). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* (Houghton, Mifflin) and Sheldon Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi. (Fiske, 50-55), (Sh.-Brns., 62-64, 74-77, 87-91).

1. Cartier explores the St. Lawrence River (54).
2. Champlain makes the First Settlement (54).
3. Marquette and Joliet add more Territory to New France (55).
4. La Salle adds Louisiana (56).

V. The Struggle Between the English and the French (Fiske, 155-176), (Sh.-Brns., 101-113).

(Merely read the description of the Indians, 57-62.)

1. How the French got along with the Indians (63, 64).
2. How the English got along with the Indians (65-70).
3. First Conflicts Between the English and the French along the Border (71-73).
4. The French Tighten their Hold on the Mississippi and Ohio Valleys (74, 76, 77).

5. The Men of New England Capture Louisburg (75).
6. Washington's First Public Service (78, 80, 82).
7. Braddock Meets Defeat at Fort Duquesne (83-86).
8. Wolfe Defeats Montcalm at Quebec (87-89).
9. France is Driven Out of America (90).

VI. The Disagreement of the English Colonies with the Mother Country (Fiske, 181-203), (Sh.-Brns., 125-147).

(Merely read the description of "Life in the Colonies," 91-100).

1. How the Mother Country Governed the Colonies (101-103).
2. The Acts of Trade and Navigation (104).
3. The Quartering of Troops and Trial without Jury (107-108).
4. The Stamp Act (109-119).
5. The Tax on Tea (120-124).
6. Parliament Punishes Massachusetts (125).
7. The Colonies Protest in Continental Congress (126-128).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The treatment of the Indians by the French and English.

The employment of savages in civilized warfare.

The patient resistance of the colonists to the mother country.

The difference between the democratic and monarchical forms of government as brought out in the assemblies of the colonists and the imposed rule of Royal governors should be explained. The resistance of the colonists is to be explained on the basis of Englishmen fighting for acknowledged English rights.

A SEVENTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

VII. The Struggle for Independence.

VIII. The Struggle for a Government.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the

topics cover from page 126 to page 205. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Camps and Firesides of the Revolution* (Macmillan). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* (Houghton, Mifflin) and Sheldon Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

VII. The Struggle for Independence. (Fiske, 203-241) (Sh.-Brns., 148-189).

1. The First Resistance: Concord and Lexington (129, 130).
2. The Battle of Bunker Hill (133).
3. Washington takes Command of the Army (131, 132, 134-136).
4. The Declaration of Independence (137, 138).
5. The Struggle for Possession of the Center.
   a. The Retreat of Washington (139-142).
   b. The Campaign and Surrender of Burgoyne (143-145).
6. The Gloomiest Period of the War.
   a. The Winter at Valley Forge (146).
   b. The Treason of Arnold (154).
7. Events which encouraged the Americans.
   a. Franklin gets France to help America (147).
   b. The Victories of Paul Jones (158, 159).
8. George Rogers Clark saves the Northwest (151).
9. The War at the South ends in the Surrender of Cornwallis (153, 155-157, 160-162).

(Topics 5, 6, 7, 8, 9 should be merely read by the children, the teacher summarizing the result of the various campaigns and events at the proper places.)

VIII. The Struggle for a Government. (Fiske, 246-256) (Sh.-Brns., 196-215).

(Merely read Chapter XIV, Our Country in 1790 (185-208), as supplementary to the study of the following topics):

1. The Colonies become States (163).
2. The Weakness of the Articles of Confederation (164, 165, 169-173).
3. Making the Constitution (174-181).
4. Organizing the New Government (182-184, 209-212).
5. Paying its Debts (213-224).

6. Enforcing its Authority (226).
7. The Rise of Political Parties (225).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The patient endurance of Washington at Valley Forge.

The treason of Arnold at West Point.

The evil effects of partisanship in Congress.

The sacrifice of special interest to general good in the Constitutional Convention.

A presentation and discussion of the main points of our Federal Constitution may be best made here in connection with the attempt to form a government. The following outline might be studied in connection with a reading of the Constitution:

THE NATIONAL GOVERNMENT.

I. *Congress.* (Legislative Department.)
   1. Meetings.
      a. First Monday of every December.
      b. Extra sessions.
   2. Consists of:
      a. Senate,—Two Senators from each State; elected for six years by the State Legislatures.
      b. House of Representatives,—One representative for every 154,000 people: elected for two years by the people.
   3. Chief Powers:
      a. To make laws.
      b. To coin money.
      c. To lay and collect taxes.
      d. To declare war.
      e. To provide for and maintain an army and a navy.
      f. To fix the standards of weights and measures.
      g. To grant patents and copyrights.

II. *Executive Department.*
   1. Chief officer,—President, elected by electors chosen by the people, each State being allowed as many electors as it has Congressmen.
   2. President's Cabinet.
   3. Chief Duties of President:

a. To sign or veto bills.
b. To send an annual message to Congress.
c. To make treaties, with consent of the Senate.

III. *Judicial Department.*

1. U. S. Supreme Court, consisting of the Chief Justice and eight Associate Justices, appointed by the President, with consent of the Senate, for life or during good behavior.

B SEVENTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IX. The Struggle for Commercial Independence.

X. The Nation Grows toward the West.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 206 to page 293. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *How Our Grandfathers Lived* (Macmillan). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* (Houghton, Mifflin) and Sheldon Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

IX. The Struggle for Commercial Independence. (Fiske, 261-301) (Sh.-Brns., 229-236).

(Merely read Chapter XIX, "Progress of Our Country Between 1790 and 1815," as supplementary to the study of the following topics):

1. Washington keeps the Nation Neutral in the Troubles between France and England (227-231).
2. Adams and the Trouble with France (234-238).
3. Jefferson and the Republican Reforms (241-243).
4. France and Great Britain try to punish each other at America's Expense (250-254, 256).
5. Jefferson's Policy of Protecting American Interests (255, 257-267).
6. The Second War with England (263-272).

(Children merely read, teacher summarizing.)

X. The Nation grows toward the West. (Fiske, 309-342) (Sh.-Brns., 215-220, 225-229, 245-254).

1. The Purchase of Louisiana (244, 245).
2. Lewis and Clark explore the Northwest (244-247, 249).
3. Pike explores the Southwest (248).
4. The Three Streams of Westward Emigration (273, 274).
5. The Resistance of the Indians (275, 276, 279).
6. The Settlement of Disputes with Our Western Neighbors (291-300).
   a. The Boundary Disputes.
   b. The Monroe Doctrine.
7. The Rising West (301-311).

(Merely read this chapter here, as its important parts will be studied later.)

8. The Highways of Trade and Commerce (312-324).

(Merely read as supplementary to above topics.)

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Jefferson declines a third term on principle.

The trickery of Napoleon.

The nation refuses to be coerced into paying tribute to the French Directory.

In connection with the discussion of maritime and commercial rights involved in the struggle for commercial independence, speak of international law, the law of nations, its function and development. (See Dole, *The American Citizen* (Heath), Chapters XLII, XLIII.)

A EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the large topic.

XI. The Long Struggle with Slavery.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 294 to page 418. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Hart's *Romance of the Civil War* (Macmillan). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* (Houghton, Mifflin) and Sheldon Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

XI. The Long Struggle with Slavery. (Fiske, 349-429) Sh.-Brns., 237-244, 256-370).

1. The Establishment of Slavery in America (23).
2. Slavery in the Colonies (93, 94).
3. Slavery at the Time of the Constitution (168, 177, 195).
4. Invention of the Cotton Gin firmly establishes Slavery (208).

(Topics 1, 2, 3, 4 are reviewed here to properly introduce the slavery question.)

5. The Settling of Western Lands Brings a Struggle over Slavery (307-309).
6. The Missouri Compromise (310, 311).
7. Industrial Changes make the North and South hold Differing Opinions on Internal Improvements, Tariff and Slavery (328, 333).
8. Jackson Denies a State's Right to Nullify (334-336).
9. The National Anti-Slavery Movement Begins (348-351).

(Certain portions of Chapter XXIII have been omitted from this outline for study, as they are too difficult. If the teacher desires, they may be read at this or some other convenient point and summarized by the teacher.)

(Chapter XXVI may be read, not studied, as descriptive material which shows the widening industrial gap between the North and South.)

10. The acquisition of New Territory again raises the Question of the Extension of Slavery.
    a. Texas secures Independence and comes into the Union (356, 357, 361).
    b. Oregon becomes a Territory (358-360, 362).
    c. The Mexican War adds New Mexico and Upper California (363-372).

11. The Political Parties try to dodge Slave Extension as an Issue (373-376).
12. The Discovery of Gold in California forces the Question of Slavery on Congress (377, 378).
13. The Compromise of 1850 (379-383).
14. The Territory of Nebraska again opens the Slavery Question (384-386).
15. The Struggle to make Kansas Free or Slave (387-389, 397).
16. The Slavery Question breaks up Old Party Lines (390-394, 400, 401).
17. The Supreme Court deals with the Slave Question (395, 396).
18. The Lincoln Douglas Debates (398).
19. John Brown's Raid into Virginia (399).
20. Abraham Lincoln is elected President: His Policy (402, 424).
21. Why the States Seceded (419-421).
22. The Final Attempts at Compromise (422, 423).
23. The War for the Union, 1861-1865.
    a. The War on the Land (425-452).
    b. War along the Coast and on the Sea (453-463).
    (Merely read the material on the battles and campaigns of the war, the teacher summarizing at the end.)
    (Children merely read the material on the campaigns of the Civil War, the teacher summarizing at the proper points.)

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Clay, the great compromiser, meets both sides half way.

Jackson takes a firm stand on nullification.

John Brown's raid into Virginia.

Under the question of the secession of the Southern States discuss the relation of States to the central government. Treat the function of State government. (See Dole—*The American Citizen* (Heath) Chaps. XI, XII.)

B EIGHTH GRADE.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

XII. The Legacy of the Civil War.
XIII. Our Development since the Civil War.
XIV. Our Recent Foreign Relations.
XV. Our Affairs at Home.
XVI. The History of California.

Under XV teach any important current events occurring since the publication of the text. Review the pertinent facts of general American History as the History of California is studied.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 419 to the end of the book. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use Mowry's *American Inventions and Inventors* (Silver, Burdette & Co.). Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

Fiske's *History of the U. S.* (Houghton, Mifflin) and Sheldon Barnes' *Studies in American History* (Heath) may be used as supplementary text-books for reference in general American History, and Hittell-Faulkner's *Brief History of California* for the History of California.

The following are the topics for this grade:

XII. The Legacy of the Civil War. (Fiske, 441-448) (376-384).

1. The Cost of the War (464-476).
   (Merely read, teacher summarizing.)
2. The Reconstruction of the South (477-484, 494, 495).
   (Merely read, teacher summarizing.)
3. The National Finances (496-499).
4. The Right of the Negro to Vote (500-502).
5. The French in Mexico: The Monroe Doctrine (517).
6. The Alabama Claims (518).

XIII. Our Development since the Civil War. (Fiske, 448-471) (Sh.-Brns., 385-403).

1. The New West (488-493).
2. The Passing of Old Political Issues: The New Issues (503-516).
3. The Purchase of Alaska (519).

4. The Rise of New Industries in the North and South (520-522).
5. The Growth of the New Northwest (523-528).
6. Our Mechanical and Industrial Progress (529-535).
7. Politics since 1880 (536-561).

XIV. Our Recent Foreign Relations. (Fiske, 471-477).

1. The Hawaiian Revolution (562).
2. The Venezuelan Boundary Dispute (563).
3. The Cuban Question (564-567).
4. The War with Spain (568-575).
5. Disorders in China (576).

XV. Our Affairs at Home.

1. The Money Question (577-579).
2. The Assassination of President McKinley (580).
3. President Roosevelt's Administration (581).
4. The Isthmian Canal (582).

XVI. The History of California (1-18). (Hittell, 1-67).

Civics.—History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The horrible cost of war.

The partisan fight of President and Congress over Reconstruction.

Our humane war for suffering Cuba.

In connection with our industrial and economic development discuss some of the simplest economic principles that have become important in our recent history, such as the division of labor, the law of supply and demand, etc. (See Dole—*The American Citizen* (Heath), Chap. XXVIII.)

WRITING.

Observe the following schedule, and until further notice, use Curtiss's Semi-Vertical Copy Books, I-VI (American Book Co.).

A FIRST GRADE.—

During first ten weeks give movement exercises with crayon and pencil preparatory to writing. During second ten weeks writing with crayon and pencil.

B FIRST GRADE.—Book I.

A & B SECOND GRADE.—Book II.

A & B THIRD GRADE.—Book III.

A & B FOURTH GRADE.—Book III.

A & B FIFTH GRADE.—Book IV.

A & B SIXTH GRADE.—Book V.

A & B SEVENTH GRADE.—Book VI.

The copy book is used mainly for the form, do much practice work on paper.

EVENING SCHOOLS.

In general the courses outlined in this supplement are to be followed by the evening schools, making allowance for the difference in numbering the grades.

The parallel reading in geography and history will be omitted in the evening schools.

Omit history below sixth grade in evening schools.

Not more than four lessons per week should be given to technical grammar, the remaining time should be devoted to oral and written composition.

In the teaching of addition more emphasis should be placed upon the content of the numerical expressions used than in the earlier grades in the day schools.

For reading material in 6th and 7th grades, utilize text-books in Geography and History. In 8th grade the reading material will be found in Industries of To-day, and in the 9th grade, in Triumphs of Science. This reading material takes the place of former selections.

Teachers in all grades may read to the class, as time permits, from selections in literature Course of Study.

The work in foreign and ungraded classes will be largely determined by the principles in accordance with the peculiar conditions and needs of the portions of the community in which their schools are located.

APPENDIX.

SOME SUGGESTIONS ON MATERIAL AND METHOD PRIMARY LANGUAGE.

FIRST YEAR.

READING.—Confine the reading of the first half term to print. Use diacritical marks in reading only so far as necessary. Never mark a word if it can be pronounced without marking. Give more real phonics, that is, sounds and ear training. Avoid so-called spelling by sound. Use many action sentences. Put the sentence on the board; let the pupil perform the act indicated, then read in natural tone and expression. Avoid the high pitched voice in reading. Much attention to phrasing or grouping words.

SPELLING.—Begin spelling the second term.

WRITING.—During the first ten weeks prepare for writing by much drill in movement exercises at board and at seats. Begin writing the second term.

COMPOSITION.—Make all composition oral during the first year, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, etc. In other respects follow printed "Course of Study."

SECOND YEAR.

READING.—Drill on phonics taught in the first year, adding a, a, oo, oo, ou, ow, oi, oy, g (hard and soft sounds), c (hard and soft sounds), ch (hard and soft sounds). Give a short drill with each reading lesson. Much attention to phrasing or grouping of words.

Memorize three selections each term.

COMPOSITION.—Make the work largely oral. Let most of the written work be at the blackboard. At first single sentences, then several sentences pertaining to the same subject. Be sure that the child has a thought, and the language is used to express that thought, not for the purpose of merely "making sentences." In other respects follow printed "Course of Study."

THIRD YEAR.

READING.—Keep up phonic drill of first and second years. Give no new diacritical marks, no new sounds except in words. Much attention to clear utterance of sounds *in words*. Continue grouping and phrasing of words.

Memorize three selections each term.

COMPOSITION.—Continue oral composition. Develop or stimulate thought on a subject, then write several sentences. Gradually lead children to rearrange sentences to make good paragraph. Call attention to structure of paragraph in reading, central thought, subordinate thoughts arranged about it. During second term write two or three paragraphs. Call attention in the reading to constructions and arrangements of sentences to make them fit together in the paragraph. Make the ear the test of good composition. If the ear is incorrect educate it by oral drill and reading of correct form. Mere rules are useless if the expression does not *sound* right to the child.

FOURTH YEAR.

READING.—Continue voice drill for clear enunciation and articulation.

Memorize three selections each term.

COMPOSITION.—For formal drill see "Course of Study" and "Lessons in Language."

Give special attention to paragraph writing from topic sentences, pictures, stories, etc., to outlining of paragraph topics, from reading or oral composition and to "Composite Composition": (1) teacher and class talk over subject (oral composition); (2) select paragraph topics from previous discussion; (3) arrange topics for a letter; (4) children suggest sentences on first topic, teacher writes in corrected form on blackboard; (5) children read paragraph aloud to test correctness, smoothness, arrangement of sentences; (6) rewrite paragraph as corrected; (7) children copy corrected paragraph; (8) treat other paragraphs in similar manner. Lead children to more and more independent work in writing of paragraphs and outlining.

GRAMMAR GRADE LANGUAGE.

FIFTH YEAR.

COMPOSITION.—Continue work of composite composition. (See Fourth Year.) Let children write one or more paragraphs of each composition independent of teacher, then read for criticism. Put emphasis on the good things. Gradually increase the number of paragraphs written independently. More and more independent outlining.

In other respects follow the "Course of Study."

SIXTH TO EIGHTH GRADES.

Sixth, Seventh and Eighth Grades will take their composition subjects from the history and geography and the reading connected with these subjects. In addition to this attention is to

be given to paragraph writing and to outlining. The work suggested for Fourth and Fifth Grades may be used profitably for any children who have not had sufficient drill of this character. It is doubtful if any of our classes have had enough of this drill.

The oral correction of composition in class has been found very helpful, as each pupil gets the benefit of the corrections and the teacher is saved much laborious work. The teacher, however, must look over some composition for the sake of spelling, capitals, grammar, penmanship and correct form. Before a set of compositions is corrected by the teacher there should be oral correction in the class pointing out in several papers characteristic mistakes. Composition should then be rewritten by pupils and put in the composition book, using left page only. The teacher then looks over the composition, indicating by marginal signs the sentences in which mistakes occur, thus, S for spelling, C for capitals, G for grammar, P for punctuation, — for paragraph, W for choice of words, etc. Pupil then rewrites on right hand page correcting mistakes. As a premium on careful work, a cross at the top of left hand page indicates that only the sentences in which mistakes occur need be copied on right hand page. Appeal to pupil's pride to keep the right hand pages as nearly blank as possible. Have them note improvement in their own work.